ADULT LEARNING PRINCIPLES AND THEIR APPLICATION TO PROGRAM PLANNING

DONALD H. BRUNDAGE, Principal Investigator
Dorothy MacKeracher

This research project was funded under contract by the Ministry of Education, Ontario

This study reflects the views of the authors and not necessarily those of the Ministry of Education.

© The Minister of Education, Ontario, 1980
Queen's Park
Toronto, Ontario

This study reflects the views of the authors and not necessarily those of the Ministry of Education.

MINISTRY OF EDUCATION, ONTARIO, CATALOGUING IN PUBLICATION DATA

Brundage, Donald H.
Adult learning principles and their application to program planning / Donald H. Brundage, Dorothy MacKeracher.

Bibliography: p.
"This research project was funded under contract by the Ministry of Education, Ontario."

1. Adult education research - Ontario. I. MacKeracher, Dorothy. II. Ontario. Ministry of Education. III. Title.

374.00723

Additional copies may be ordered from:

The Ontario Institute for Studies in Education
Publications Sales
252 Bloor Street West
Toronto, Ontario M5S 1V6

or from:

The Ontario Government Bookstore
880 Bay Street
Toronto, Ontario M7A 1L2

Record Number: ON01615
Printed by the Ontario Institute for Studies in Education

1 2 3 4 5 XX 48 38 18 08

Abstract

This report, *Adult learning principles and their application to program planning*, was prepared by the Department of Adult Education of the Ontario Institute for Studies in Education, under contract with the Ministry of Education of Ontario. It focusses on adult learning principles which were developed through an analysis and synthesis of the literature in adult education, andragogy, teaching and learning, and other related fields. These learning principles were then applied to the planning of adult learning programs in general and to the retraining and ongoing professional development of teachers in particular.

The report consists of six sections. The first deals with those background assumptions which appear to be most relevant to the field of adult education and adult learning. The second describes the characteristics of adult learners and the resulting principles of adult learning under nine headings: physiological characteristics; self-concept; emotions, stress, and anxiety; past experience; time; motivation; paradox; learning styles and abilities; and developmental stages and transitions. The third outlines some of the characteristics of the learning situation, the resulting principles of adult learning, and implications for adult teaching under three headings: teaching behaviours; design of the teaching process; and the characteristics of teachers of adults.

The fourth section describes some basic applications of the adult learning principles to program planning in general. The fifth examines the application of these principles to the retraining and professional development of teachers in the elementary and secondary school system. The sixth section provides a summary of thirty-six adult learning principles, with implications for facilitating and program planning related to each principle.

Following the body of the report is a bibliography of 158 references used in the development of the adult learning principles and gathered from the fields of adult education, andragogy, adult learning, and program planning. The bibliography provides a rich resource for the reader who wishes to probe further into the issues related to adult learning in general and to adult learning within the context of the retraining and professional development of teachers in particular.

Contents

Prologue/*vii*

Acknowledgments/*viii*

1 Introduction/*1*

2 Background Assumptions/*5*

3 Characteristics of the Adult Learner/*21*

4

5 Learning Principles Applied to [illegible]

6 Application of Learning Principles to the Retraining and Professional Development of Teachers/*87*

7 Summary of Learning Principles with Implications for Facilitating Learning and Planning Programs/*97*

Bibliography/*117*

Prologue

Theories of adult learning are beginning to attract increasing attention from both researchers and practitioners. Learning related to child growth and development has been under examination for decades, culminating finally in a spate of research which poses intriguing challenges for those concerned with adult learning in a variety of contexts.

This report makes a substantial contribution in bringing into awareness the rich literature on the subject and in synthesizing the findings into comprehensive adult learning principles. The special focus of this study, commissioned by the Ministry of Education, applies these principles to the issues of teacher retraining and the continuing professional development of teachers.

The research officer for this project was Dorothy MacKeracher, a doctoral candidate in the Department of Adult Education, whose special interest lies in the field of adult learning theory. While she received guidance and direction from the principal investigator, as well as Adult Education faculty and students, it was in fact her rich insights into the phenomena of adult learning theory which made this report possible.

Donald H. Brundage
Principal Investigator

Acknowledgments

This report was written as part of a contract between the Ministry of Education for Ontario and the Department of Adult Education in the Ontario Institute for Studies in Education. The text was written by the Research Officer under the supervision of the Principal Investigator and was reviewed by various members of the department staff while still in draft form.

The writers would like to acknowledge, with gratitude, the assistance of: Sonja Davie, whose comments and assistance in developing the text were invaluable; Norma Jansson, who cheerfully typed the original manuscript; Jutta Keylwerth, who assisted in the literature review; and various members of the department staff, in particular Alan Thomas, Roby Kidd, William Barnard, Lynn Davie, Robert MacIntyre, and James Draper.

Donald H. Brundage
Principal Investigator

Dorothy MacKeracher
Research Officer

1 Introduction

This is a report about adult learning and about how it can be facilitated and planned. The report grows out of a review of the literature available in the fields of adult education, andragogy, learning, teaching, and program planning and out of the practical experience of the writers. We have attempted to reflect on and synthesize the literature throughout the report.

We have chosen to focus on learning principles relevant to individual learning rather than those relevant to groups, organizations, or communities and the learning which occurs in those settings. The literature in these areas was too extensive to be included in this report. We believe that, in the end, it is the individual who learns. We should also note that groups, organizations, and communities have a profound influence on how and what the individual learns, and on how and what learning can be facilitated or planned in those settings.

We believe that education is a pragmatic enterprise which attempts to find an appropriate conjunction between what is possible and what is desirable. The values incorporated into the content and processes of education and teaching are never explicit, only implied through structure or strategy. These values form underlying assumptions and predetermined positions which influence the plans and activities designed to lead to learning. We have chosen, therefore, to focus on this background and its resulting outcomes rather than on specific processes or content. References have been included for further investigation by interested readers.

We understand learning as a cyclical and spiral process which continues and changes over time and in which the learnings from one cycle become the input and support for succeeding cycles. We understand learning programs to include both activities and content, each of which is both

structured and fluid in terms of organizing principles and relationships. The adult learns skills and strategies through performing the relevant activities. Those learned through observing, reading, and listening are observational and passive. Those learned through experimenting, experiencing, writing, and talking are discovery and active. There are numerous ways for the teacher or planner to sequence these skills and strategies through activities and to develop the interpersonal relationships required to carry the activities out. These organizing principles indirectly help adults learn how to organize their own learning strategies and interpersonal relationships.

Specific knowledge can be learned through a variety of processes. The manner in which knowledge is organized in learning resources, including the personal knowledge of human resources, assists learners to acquire organizing principles which then provide the fundamental framework to which new knowledge is added. Modifying or transforming an existing framework is a more complex and difficult learning task than adding new knowledge to an old framework or acquiring a totally new one.

We believe, in the light of this background, that adults learn skills and strategies through personally carrying out activities specifically designed to include those skills and strategies; that adults learn knowledge by acquiring organizing principles through passively encountering those implied in various learning resources and actively discovering or developing their own; and that personal values are attached to every skill, strategy, and meaning as it is learned. What is learned is rarely the same as what was intended by the teacher. The learner will respond not only to planned content and activities but also to the skills, strategies, meanings, and values implied as the teacher teaches.

We believe, furthermore, that learning occurs not only as a result of the learner's activities but also as a result of the interactivity between teacher and learner, between teaching and learning. The most appropriate behaviour in such interactions is interdependence, with teacher and learner learning from and teaching each other. Here we would have an ideal set of conditions, one which is highly valued by adult educators but rarely achieved in reality and even more rarely sustained over time. It is an ideal toward which we can work. Our inquiry for this report is basically into the conditions necessary to facilitate change by both teachers and learners in the general direction of this ideal.

The complexity of all the issues involved tends to defy the format

of a report--flat pages and straight lines. We found that multidimensional models and dynamic equilibria were hard to convey. The complexities of adult learning and relevant teaching and program planning activities cannot be described in any simple way. We hope the reader will view each topic introduced as part of a larger whole, a gestalt of learning and adult learners. Each part bears a relationship to and is affected by every other part. The entire gestalt is far more than the sum of the parts and their relationships. We leave the act of creating or discovering this gestalt to the skills, strategies, meanings, and values of each reader.

Perhaps the most fundamental issues to keep in mind as you read are: that learning involves a dynamic equilibrium between change and stability, structure and process, content and activity; that learning occurs over time and within societal contexts and relationships; that adult learners have past experience, present concerns, and roles relevant to work and family as well as to learning, and future expectations, all of which influence learning; that adult learners bring not only their mind but also their physical body, emotional responses, and cherished values to learning; and that teachers are also adults and learners.

The reader should be aware that we experienced several difficulties in writing this report:

1) We decided to use the term "teacher" throughout the report to refer to any person assisting an adult to learn or change. Other synonymous terms might include "change agent," "instructor," "tutor," "adviser," "planner," "consultant," "professional development officer," "facilitator."

2) We used masculine pronouns to refer to teachers and learners, not as a sexist comment but to make the writing less tortuous. Such pronouns may be read as masculine or feminine according to the perceptions of the reader.

3) We had some difficulty conveying multidimensional concepts in the written format. In some places, we may have unintentionally implied dichotomies when a continuum would be more appropriate. In other places, our description of dynamic models which tend to change over time are less than adequate. The essential qualities of these concepts, therefore, are dependent on the ability of the reader to conceptualize at increasingly complex and multidimensional levels.

The report was written in response to a request from the Ministry of Education to the Department of Adult Education (OISE) for a synthesis and summary of adult learning principles and how these can be applied to program planning, in particular for programs in the retraining and ongoing professional development of teachers.

The report is divided into six sections. The first focusses on background assumptions in the field of adult education and in adult learning and teaching. The second looks at the characteristics of adult learners. The third deals with some of the characteristics of the adult learning environment. (We have dealt with adult teaching as part of the total environment which surrounds adult learners as they learn.) The fourth section focusses on program planning. The fifth examines the specific concerns involved in the retraining and professional development of teachers. The final section provides a summary of adult learning principles with general implications for facilitating and planning.

2 Background Assumptions

This section provides a brief outline of some of the underlying assumptions and ideological positions held by various writers in the field of adult education. The outline is by no means exhaustive. The literature suggests a wide range of orientations to both learning and teaching, and there is consensus on very few issues. For the sake of brevity, we have selected the most common orientations found in our literature search. We have also noted disagreements among various orientations where these appear to be of considerable importance. Some of the points made are expanded in later sections, at which point more complete references are provided.

A. BASIC DEFINITIONS

Adult education refers to the institutionalized system which provides the programs, administrative structures, processes, settings, resources, and so on that facilitate adult learning. Learning may be carried out by individuals acting on their own, as in libraries; by individuals acting in one-to-one relationships with another person, as in counselling; and by individuals acting in group settings, as in formal courses provided by colleges, night schools, universities, and other institutions.

Adult Learning refers both to the process which individuals go through as they attempt to change or enrich their knowledge, values, skills, or strategies, and to the resulting knowledge, values, skills, strategies, and behaviours possessed by each individual. Learning is most often defined in the literature as a relatively permanent change in behaviours as the result of experience and as the activities involved in this process of change.

This definition appears to be valid for both adults and children. In general, child learning is viewed as *forming* (acquiring, accumulating, discovering, integrating) knowledge, skills, strategies, and values from experience, while adult learning is viewed as *transforming* (modifying, relearning, updating, replacing) knowledge, skills, strategies, and values through experience. (Knowles, 1973; Hart, 1975; Cropley, 1977; Mezirow, 1978)

Andragogy refers to the art and science of helping adults learn, as compared to pedagogy, which is defined as the art and science of helping children learn.[1] Andragogy can also be described as the study of a teacher's behaviour while helping adults learn. The term "adult teaching" is used in this report rather than "andragogy."

To the extent that adults and children are different, learn in different ways, and need to be helped to learn in different ways, it is appropriate to discuss andragogy and pedagogy as separate issues (McKenzie, 1977). To the extent that adults and children are similar, the dichotomy is inappropriate.

Mathetics refers to the science of a learner's behaviour while learning (Faure, 1973, p. 130). Mathetics focusses on the learner and the processes of learning (i.e., forming and transforming knowledge, skills, strategies, and values) rather than on the teacher and the processes of teaching (i.e., presenting, persuading, assessing, guiding, and so on). It stresses continuities over the lifetime of the individual as well as the uniformities and diversities among individual learners. It attempts to deal with learning as the result of holistic experiences which affect the learner in many different ways, each of which is describable in the constructs and terms of the various branches of the humanities and the sciences. Mathetics, therefore, tends to draw on many different academic disciplines.

This report attempts to focus largely on adult learning and mathetics but includes sections on teaching activities and on applying the principles of adult learning (i.e., andragogy). The literature used as background was drawn from both andragogy and pedagogy, from adult learning and mathetics, and from related disciplines such as psychology, sociology, physiology, and psychotherapy.

B. EDUCATION IS PART OF A POLITICAL ENTERPRISE.

The International Sumposium for Literacy, after completing lengthy discussions about the function of literacy education, declared:

> Literacy work, like education in general, is a political act. It is not neutral, for the act of revealing social reality in order to transform it, or of concealing it in order to preserve it, is political....[2]

---

[1] Knowles (1970) actually defines pedagogy as "the art and science of teaching children" (p.37) and andragogy as "the art and science of helping adults learn." It is our belief that we cannot change the meaning of the root word *agogos* (meaning "to lead"). Our preference is that pedagogy should be defined as "the art and science of helping children learn" and andragogy as "the art and science of helping adults learn."

[2] *Final Report*, International Symposium for Literacy, Persepolis, Iran, September 1975. "The Declaration of Persepolis," pp. 35-38.

All education is part of a political enterprise, and its basic principles reflect an underlying political philosophy and a set of assumptions about how and what learners learn. In the field of adult education, we find several sets of political orientations, of which three seem to be most prevalent. Each of these leads to variations in how teaching and learning become institutionalized and operationalized.[3]

The first and most widely held orientation is based on a liberal philosophy and a pluralistic and systemic approach to teaching and learning. This orientation is based on the presupposition that every individual, in response to his[4] personal life experiences, develops a unique model of reality which represents the meanings and values he has attached to those experiences and the strategies and skills he has acquired through them. This representational model is both similar to and different from the models developed by others. Since each learner brings a unique model of reality to the learning situation, he also brings unique needs and goals. The educational system, therefore, must be prepared to accept, respect, and accommodate these individual needs and goals.

The liberal orientation also recognizes that each individual, in encountering the world, also encounters other persons and forms social groupings for mutual survival and security. Social interactions require that each individual be able to communicate his model of reality to others; be able to comprehend and acknowledge theirs; and be willing and able to develop shared aspects of a group-defined model which is then assimilated into his own. The educational system needs to be able to facilitate this communicating, comprehending, acknowledging, and sharing through group activities and social interaction. The needs and goals of the social groups are not necessarily more important than individual needs and goals; rather they are viewed as having equal importance.

The task of adult education is to provide a diverse and flexible set of programs and processes to accommodate all these individual and

---

[3]These orientations are taken from an address by Dr. Gregory Baum, "Adult education as a political enterprise," to the alumni of the Department of Adult Education, Ontario Institute for Studies in Education, 1978.

[4]Learners and teachers are identified with masculine pronouns throughout this report. This was done to make the task of writing easier and the syntax less complicated. The reader may read these pronouns as masculine or feminine, as seems appropriate to him/her.

group needs and goals; to provide democratic structures; and to facilitate learning activities rather than impose standards for content and performance. The teaching activities are process-oriented and include helping individuals to create, maintain, extend, and communicate their own representational model; to test and evaluate the utility of their model; to comprehend the models of others; and to develop shared aspects of a group model through group activities and dialogue with others. The learning activities include participating in new experiences; discovering, entending, and transforming personal models of reality; obtaining feedback about the utility of such models; problem-solving; and dialoguing.

This orientation leads to individualized models of behaviour which function within group-defined limits. It has a tendency to value means or processes to be used in learning rather than the ends or goals to be reached. It tends to assume that individual adults are capable of adapting to the social pressures of the group without necessarily altering or reducing those pressures. (Knowles, 1970; Baum, 1978; Smith, 1978)

The second orientation is based on a conservative philosophy and a universal and traditional approach to teaching and learning. This orientation is based on the presupposition that there exists, within any given society and culture, one objective reality and ultimate truth which can be known and understood and which should be integrated into the knowledge, values, skills, and strategies of every individual within that society or culture. The individual acquires this objective reality through assimilating the standardized and public knowledge, acquiring the related skills and strategies, and accepting the approved values. The individual can be evaluated by other members of his society on the basis of his ability to conform to a set of behavioural norms which are standardized by role and status. In the ideal society, all individuals are involved in setting standards and evaluating the performance of others. In real societies, these activities tend to be performed by the most powerful and influential members of the group. Sanctions are provided through law or custom to maintain the individual's commitment to this objective reality.

The task of adult education is to provide learning programs which allow all societal members to learn the basic components of the approved model of reality. The concept of universal literacy stems from this orientation (i.e., every adult *should* be able to read). Other tasks

focus on the provision of autocratic structures and of learning content and criteria for judging performance. The teaching activities are content-oriented and include defining the content to be learned, setting objectives, planning learning activities, presenting content, providing feedback related to standardized criteria, disseminating information, and modelling appropriate behaviour. The learning activities include comprehending and assimilating the content, testing out skills and strategies, and accepting and responding to feedback.

This orientation leads to an objective and universal model of behaviour which is prescribed by the group. It has a tendency to value ends or goals to be reached rather than the means or processes to be used in learning. It tends to ignore the individual needs and problems of learners. It leads to consistent and competent behaviour among individuals which can be publicly certified or licensed. (Cross, 1976; Baum, 1978; Knowles, 1973)

The third orientation is based on a socialistic philosophy and a therapeutic approach to teaching and learning. It shares many characteristics with the liberal orientation. It also presupposes the same multiple individual versions of reality. As each individual develops his representational model, he tends to delete, distort, oversimplify, and generalize various aspects of his experience. Some aspects become lost, repressed, or misrepresented. Society itself encourages this distortion through valuing some models of reality more than others and by rejecting or discounting some. Those individuals whose models of reality are undervalued, rejected, or discounted tend to occupy marginal positions within society.

The task of adult education, therefore, is to provide learning programs which will assist in the recovery of lost or repressed models and traditions, to raise misrepresented aspects to a conscious level and transform them, and to persuade the larger society to change its methods of dealing with these aspects. The teaching activities are issue-, problem-, or person-centred and include assisting individuals through therapeutic or counselling-type processes and assisting groups through consciousness-raising processes or through destabilizing-changing-restabilizing processes. The learning activities include self-reflecting, transforming, reintegrating, and bringing altered models of reality to the attention of others.

This orientation leads to the recovery of lost models and traditions and to the restructuring of misrepresented ones. It has a tendency to value separate issues and problems rather than relationships among issues and problems. In the process of recovering and restructuring certain aspects of a model of reality, it tends to discount whatever validity and utility the original model had. When used judiciously it enhances and extends the individual in positive ways and alters society in ways which enhance both individuals and society. (Freire, 1973; Mezirow, 1978; Baum, 1978)

Although these orientations are discussed here as if they were polarities which operate exclusive of each other, it is more common to find varying combinations of them within one system, one institution, or even one teacher. In many cases educators espouse one orientation for content and another for process. It is not uncommon to find a teacher who believes that all learners should end up with the same content (a conservative orientation) while encouraging the individual learners to use different processes (a liberal orientation).

C. ALL ADULTS CAN AND DO LEARN.

The work of Tough (1971, 1978) clearly shows that adults engage in a wide variety of learning activities in response to their daily needs and problems. They may not define these activities as "learning," since there may be no connection with formal schooling or the educational system; but the activities are clearly recognizable as learning activities.

Recent works in fields related to adult education indicate that adults of all levels of intelligence, all ages, and all stages of development up to the moment of death are capable of learning. Adults also experience a sense of well-being when they do learn and when their environment supports and encourages learning. These implications are to be found in the works of developmental psychologists such as Brim (1977), Vaillant (1977), Levinson (1978), and Gould (1978); in the works of educational gerontologists such as McClusky (1970), Kalish (1975), Botwinick (1973), Neugarten (1968, 1976), and Grabowski (1970); in the works of thanatologists such as Kübler-Ross (1970) and Imara (1975); and in the works of educators working with retarded adults such as Vanier (1971), Wolfensberger (1972), and Blatt (1970).

D. ADULTS ARE NOT MATURE CHILDREN; NOR ARE CHILDREN IMMATURE ADULTS.

In adult learning one of the basic conflicts concerns the nature and characteristics of adults as learners in comparison with children. The literature is divided on the issue. Some writers (Houle, 1972; Feringer, 1978; Hart, 1975) maintain that learning is learning and is the same at every age. Other writers (Knowles, 1970, 1973; McClusky, 1970) maintain that adult learning and child learning are both qualitatively and quantitatively different. Our literature search suggests that the internal mental and physiological processes involved in learning may indeed be similar, since they are based on biological structures which are not different.[5] Other variables which affect the overall process and outcome of learning are different for adults and children, since these are derived from social, psychological, developmental, and situational characteristics. The major differences are summarized below and will be expanded further in the section on learner characteristics. These differences are sometimes aspects of a continuous characteristic or continuum, as in the accumulation of experience, and are sometimes aspects of a discontinuous characteristic, as in the shift from concrete to abstract thought. The summary provides an aid to analysis and is not meant to reflect universal, absolute differences:

Adults, in general:	Children, in general:
Adults have extensive pragmatic life experiences which tend to structure and limit new learnings. Learning focusses largely on transforming or extending the meanings, values, skills, and strategies acquired in previous experience.	Children have few pragmatic life experiences. Learning focusses largely on forming basic meanings, values, skills, and strategies.
Major pressures for change come from factors related to social and work roles and expectations, and to personal need for continuing productivity and self-definition.	Major pressures for change come from factors related to physical growth, to demands for socialization, and to preparation for future social and work roles.

---

[5] Current research on sex differences in learning and mental functioning, based on hormonal and structural differences between men and women (see, for example, Goleman, 1978), were not included in this report. These variations and their effect on learning differences between children and adults have yet to be explored. It is possible that we will one day need to distinguish between female children and adults and between male children and adults.

Adults, in general:	Children, in general:
Learning needs are related to current life situations	Learning needs are related to developing organized patterns for understanding future experience.
Adults are more likely to use generalized, abstract thought.	Children are more likely to use specific, concrete thought.
Adults are likely to express their own needs and describe their own learning processes through verbal activities which allow them to negotiate and collaborate in planning their own learning programs.	Children are likely to express their own needs and learning processes through non-verbal activities, which leads to planning by "expert" observers and interpreters.
Adults have an organized and consistent self-concept and self-esteem which allows them to participate as a self separate from other selves and capable of acting independently of others.	Children have a relatively unorganized and inconsistent self-concept which allows them to perceive themselves as a self separate from, but dependent on, others.
Adults are assigned a responsible status in society, and are expected to be productive.	Children are assigned a non-responsible status in society, and are expected to play and learn.

(See, for example: Kidd, 1973; McKenzie, 1977.)

E. HUMAN BEHAVIOUR TENDS TO BE ORGANIZED AROUND TWO TRENDS.

Adults and children show some characteristics and behaviours relevant to learning which are similar in nature. One set of ideas about these similarities reflects the notion that human behaviour tends to be organized around two trends: the trend to master and the trend to belong.

The trend to master relates to feelings of autonomy, to independent behaviour within society, and to a sense of personal control over the conditions of one's life. Learnings related to this trend include meanings, strategies, and skills required to function independently and values which reflect positive feelings about oneself as competent and worthwhile. Such learnings lead to a reduction of feelings of helplessness and inferiority and assist in meeting survival, achievement, and self-esteem needs. This type of learning responds best to behavioural or task-related feedback.

The trend to belong relates to feelings of affection, to inter-dependent behaviour with other members of society, and to a sense of interpersonal involvement. Learnings related to this trend include personal and shared meanings and values, and the skills and strategies necessary to function interpersonally and cooperatively. Such learnings lead to a reduction of feelings of isolation and alienation and assist in meeting security, belonging, and affiliation needs. This type of learning responds best to feeling-oriented feedback.

Both these trends develop from the basic dependency position which children tend to occupy. The growing child is expected to develop behaviours reflecting both trends. Adult educators tend to assume that the basic position and behaviour of an adult is no-longer-dependent. This view presupposes that the adult is both willing and able to use both independent and interdependent behaviour (or some combination thereof) in ways which are appropriate to a given situation. It ignores the fact that adults also need to be able to use dependent behaviours in certain situations--for example, during severe shock following personal accident or trauma, disorientation resulting from entry into an unfamiliar environment, or helplessness in the wake of some catastrophe such as a flood. In such situations, the adult may need to accept assistance from others and would be foolhardy not to do so. The assumption also ignores the fact that some adults have never learned the basic behavioural patterns for independence or interdependence; some may be capable of functioning in only one position.

This summary suggests that a fully functioning adult will use all three forms of behaviour in varying combinations and under varying conditions and that maintaining a dynamic equilibrium among these three is one of the tasks of adulthood (Jones, 1968; Maslow, 1970; Cross, 1976; Coleman, 1976; Hunt and Sullivan, 1974; Schutz, 1967; Gibb, 1964)

F. LEARNING IS A NATURAL, EVOLVING PROCESS.

Most writers in the field of adult learning directly state or indirectly imply that learning is an evolving process which originates, and is activated from, within the learner and which grows out of the learner's need to interact with his environment. Four ideas are involved in this evolutionary process:

1) That learning is a normal physiological-psychological activity which does not require external pressure or encouragement to begin and which proceeds out of inner drives fuelled by intrapersonal energy rather than out of external direction fuelled by rewards and punishments. The basic problem confronting the adult teacher is not how to motivate learning, since it happens naturally, but rather how to avoid setting up disincentives and obstacles which retard, block, or de-motivate learning. Once such disincentives and obstacles are operating, however, the teacher must take steps to neutralize or remove them, thereby allowing the learning process to return to its normal level of activity. If the adult is not blocked in his learning activities, the teacher can enhance learning by adding positive external conditions which influence and reinforce learning. (Hart, 1975; Pine and Boy, 1977)

2) That learning is connected to the developmental processes which occur over the individual's entire lifetime. Learning, therefore, occurs throughout life in response to experience which encourages further development. At each successive stage, the learnings from previous stages are an influence on, and become integrated into, learnings from the current stage. In the literature on lifelong education, this cumulative sequence is referred to as vertical integration, a concept which suggests that with children, as well as with adults, previous experience must be counted as a factor in current learning. (Kidd, 1973; Dave, 1976; Cropley, 1977; Feringer, 1978)

3) That learning and the individual's current developmental roles and concerns are directly and intimately related. Learning is necessary

for responding to the internal and external pressures of experience, and experience is the essential component in the learning an adult does. In the literature on lifelong education, this current experience is referred to as horizontal integration, a concept which suggests that the most effective learning activities, content, and processes are ones which are consistent with and supportive of the individual's current roles and problems. (Faure, 1973; Dave, 1976; Cropley, 1977)

4) That normal learning activities are designed so as to allow each person to make sense of the chaos and confusion of raw experience; to reduce the unknown aspects of life to a manageable level; and to develop ways to predict how best to respond to, interact with, and influence his own particular life space. Current theories on brain function suggest that the brain of a newborn human is preprogrammed to deal with certain issues at certain life stages and is designed to allow for learning throughout life. This human brain is intensely aggressive. Out of the individual's total experience, the brain seeks out and uses that which it needs to make sense of experience. According to these theories, learning occurs as the brain extracts, from confusion, sets of meaningful patterns which are then organized into programmed structures which control and guide further learning. Only two conditions are required for learning, according to such theories: that enough raw data or experiences be provided, with enough repetitions and variations on themes to allow differences in patterns to emerge; and that enough time and freedom from threat be provided to allow the patterns to emerge naturally.

A third condition can be inferred for adult learning in particular: the existence of sufficient prior patterns and programmed structures to handle new experience productively. If the adult learner does not already possess these patterns and programmed strategies for handling new material, then the learning activities must provide opportunities for him to acquire them, without treating him as childish and immature. (Hebb, 1972; Hart, 1975; Feringer, 1978; Thibodeau, 1979)

G. THE LEARNER LEARNS HOW TO LEARN.

One corollary of this approach to learning (i.e., through evolutionary processes) is that there are essentially two categories of learning involved. In the first, strategies and structures already learned become

the foundation for further learning, which adds or modifies and then integrates old and new learnings into a representational model that is similar to the old model, only enlarged and enriched. In the second, new learning alters the strategies and structures quite radically, leading to a restructuring of parts of the representational model. The new structures, strategies, and altered model must then go through a process of total reintegration so that all parts of the old model are brought into line with new learnings.

Most writers do not distinguish between these two different types of learning. Some others have proposed that the first type be called "learning I" or first-order change, while the second be referred to as deutero-learning, second-order change, meta-learning, or learning how to learn (i.e., change in the process of change). (Schon, 1971; Bateson, 1972; Knowles, 1973; Smith, 1977; Watzlawick et al., 1974; Tough, 1978; Maudsley, 1979; Tart, 1975)

Much of the recent literature in adult learning focusses on learning how to learn but does not yield a consensus on how the process occurs. The occurrence of second-order change is often viewed as uncontrollable, unpredictable, and clearly unteachable--as a quantum leap or sudden illumination, which is often described as creativity, intuition, or religious conversion. It seems clear that the resulting learning is logical and rational only in retrospect. (James, 1902; Koestler, 1964; Watzlawick et al., 1974; Denis, 1979; Graves, 1974)

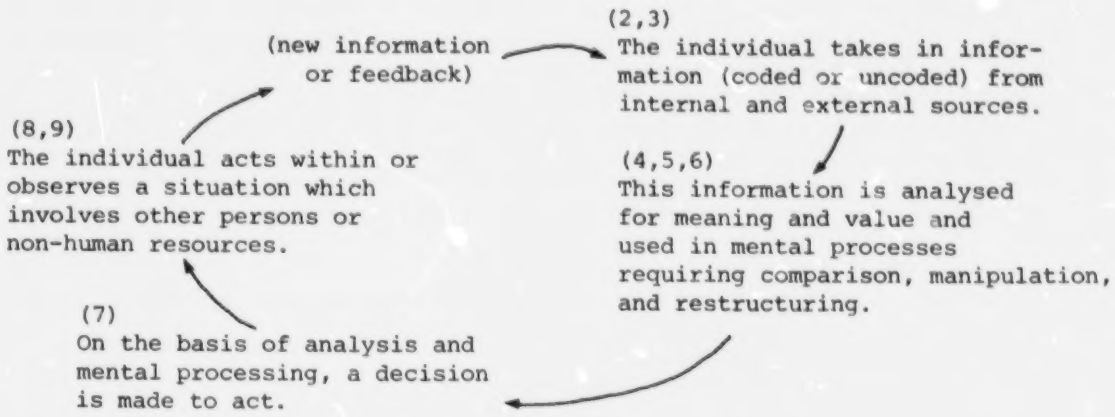
The basic components of learning how to learn appear to be the individual learner's being able to accept responsibility for relying on himself to function as an internal change agent ("I am changing me") rather than relying exclusively on a change agent who is perceived to be external ("They are changing me"), and the individual learner's being able to conceptualize his own learning process. The basic processes are ones of self-reflection and self-direction.

It is clear from the literature, however, that not all adults have reached this level of learning skill. Those who have such skill appear to be more productive learners than those who do not. It is also clear that the most effective learning requires not only self-reflection and self-direction but also input from external sources and objective observers. Without input from others the individual learner can become stalled in self-perpetuating errors and false assumptions. This type of learning can thus be described as interdependent rather than as dependent

or independent. (Tough, 1971; Knowles, 1973; Kidd, 1973; Smith, 1977; Griffin, 1977; Cross, 1976)

H. THE LEARNING PROCESS IS CYCLICAL.

There are as many ways to describe the learning process as there are theorists and writers. There does appear to be some agreement on four basic steps which are involved in every learning activity. These are shown in the figure.


(2,3)
The individual takes in information (coded or uncoded) from internal and external sources.
(new information or feedback)
(4,5,6)
This information is analysed for meaning and value and used in mental processes requiring comparison, manipulation, and restructuring.
(7)
On the basis of analysis and mental processing, a decision is made to act.
(8,9)
The individual acts within or observes a situation which involves other persons or non-human resources.

However, this circular diagram requires more detail:

1) (Overall context.) Learning always occurs within a specific context which contributes, both directly and indirectly, to whatever is learned.

2) The richness and accuracy of the information taken in will be limited by the sensory receptors of the learner, by his focus of attention, and by his prior expectations about the information. These factors are affected by age-related changes, by physical health, by cognitive style, and by previous experience and learning.

3) The information taken in is controlled by the learner. What is absorbed may not be equal to what was presented.

4) The analysis of information for meaning and value is primarily for personal meaning and value relevant to self, and secondarily for public meaning and value or reliability.

5) All the activities can be conscious or unconscious. Conscious processes tend to use words as representational markers, although they can also make use of what Bruner called enactive (felt) or iconic (heard and seen) representations. Unconscious processes may use enactive or iconic representations but more likely occur below representational levels. The vast bulk of learning is unconscious. Most formal learning experiences, however, involve deliberate and conscious processes.

6) Formal learning in groups requires that the analysis, comparison,

manipulation, and restructuring processes be verbalized as much as possible, either in writing or orally. Adults learn to distrust non-verbal, non-representational, and unconscious learning because it is difficult to verbalize and is often perceived as illogical or irrational.

7) A decision to act may result in behaviour as fleeting as a shift in the focus of the eyes. Such decisions occur too rapidly to rise to consciousness. Conscious decisions which result in more complex behaviour may take longer to make as well as to implement.

8) Feedback is a function of information and is subject to the same distortions as the original information. It is more effective, therefore, when it is provided from an external source--for example, a trusted other. The information from feedback provides the learner with a sense of success or failure. When feedback is immediate, its potential for modifying learning is enhanced.

9) If the learner values his own successful performance or positive feedback from an observer, he will experience a sense of reward or disappointment (i.e., reinforcement). When reinforcement is immediate, its value to the learner is enhanced.

These basic steps consist of cyclical, and probably unidirectional, activities through which the learner moves ahead (i.e., changes) in spiral fashion in the general direction desired. In order to describe them or utilize them in a teaching model, we would need to select a starting point and work through the sequence. Our selection of a starting point would suggest how *we* value learning but would have little to do with the learning actually being done. Any linear sequence implies cause-and-effect relationships which are very difficult to prove when studying human behaviour. All learning theories assume that learning activities begin somewhere on the cycle and proceed from there. They further assume that teaching activities logically must provide the step immediately prior to the point at which learning starts. For example:

- Information-processing theories begin with the intake of information. Related teaching activities focus on how and what material is presented as the source from which information is selected.

- Humanistic theories begin with the analysis of information for meaning and value. Related teaching activities focus on how to discover what information the learner has available for analysis.

- Experiential theories begin with the actions of the learner. Related teaching activities focus on creating a situation in which the learner can act.

- Operant conditioning theories essentially ignore all but the step in which the learner acts within a given situation. Teaching activities focus on how to provide feedback and what to reinforce.

(Various sources: Kolb and Fry, 1975; Joyce and Weil, 1972; Keeton, 1975)

I. ADULTS LEARN IN A VARIETY OF SETTINGS.

Adult learning goes on in settings in which the learner works alone, works with one other person, or works in a group. Adult educators tend to assume that adults learn better in group settings because other members of the group offer both support and challenge. The work of Tough (1978) and his colleagues suggests that adults learn at least as much and just as productively when functioning alone or with one other person.

There are two different kinds of learning which go on in group settings. When individuals come together in a group setting and their learning motives stem from individually defined problems and needs, they tend to use the group to help them reach individual goals. The end result is individual learning. This type of learning occurs in classrooms, workshops, and seminars. When individuals come together in groups and their learning motives stem from group-defined problems and needs, the individuals each contribute some fragment to the total learning which occurs and each benefit from the contributions of other group members. The end result is group development. This type of learning occurs in community development projects and organizational development activities. (Smith, 1978)

J. ADULTS LEARN MORE PRODUCTIVELY WHEN THEY FEEL THEY ARE VOLUNTARY LEARNERS.

Several writers suggest that a major difference between adults and children is that the adult is a voluntary learner while the child is a non-voluntary learner. This distinction appears to reflect a legal definition rather than a psychological description. Clearly the child is a non-voluntary learner in that his attendance at school is compulsory. There are few examples of compulsory attendance requirements for adult learners. Those which do exist are associated with corrective learning related to the courts, such as following driving convictions or alcohol abuse.

For the most part, the adult's attendance at learning programs is voluntary in the sense of being non-compulsory. However, he may feel that external conditions over which he has no control are forcing him to attend a learning program against his wishes. In such circumstances adults will behave as if they were non-voluntary learners, with the same problems as turn up in children's compulsory learning programs: erratic attendance, lack of "motivation," lack of progress, disruptive behaviour, and so on. Adults behaving in this manner are often viewed as childish

and are treated as such. The treatment generally includes punishment, more restrictive rules about attendance and behaviour, threats related to lack of progress, and extraordinary efforts to increase motivation. This type of "solution" contributes still further to the problem.

Perhaps the most useful point which can be made is that adults learn more productively when *they* feel they are voluntary learners with the right to choose whether or not they will actually learn.

K. THE RELATIONSHIP BETWEEN TEACHING AND LEARNING IS NOT ALL THAT CLEAR. Our present understanding of the relationship between teaching and learning is confusing. Research on teaching consistently shows that teacher effects on learner achievement are unstable and that most teaching behaviour is unrelated to learner outcomes (Pratt, 1979). The best predictor we have is that proposed by Lewin (1951) to the effect that behaviour is a function of the interaction between person and environment: B = f(PE). This relationship has been reiterated and extended by several authors since (Rubin, 1969; Rogers, 1969; Knowles, 1973; Kidd, 1973; Bradford, 1974; Bortner, 1974; Hunt and Sullivan, 1974; Rotter, 1972; Kelly, 1955). A teacher must be considered as an influential part of a learner's environment through the provision of guidance, structure, information, feedback, reinforcement, and support.

3 Characteristics of the Adult Learner

In the BPE formulation first proposed by Lewin (1951), the "P" stands for Person and can include any characteristics of a learner relevant to learning. Hunt and Sullivan (1974), in an extensive review of the BPE paradigm, state that:

> We believe that the person occupies the central role in any psychological theory and that educational planning should begin with the [learner] rather than with objectives or teaching methods.[1]

They go on to distinguish between two kinds of individual differences: contemporaneous characteristics or traits which are viewed as relatively stable over time and/or consistent across situations; and developmental or stage characteristics which change over time and/or in response to the perceived environment. It is important that we think about characteristics flexibly in terms of the distinction. For example, if on the basis of his initial responses in a class we describe an adult learner as using dependent behaviour, we may come to think of that description as a fixed trait. We would then proceed to treat him as if he were a dependent person and not see that his initial behaviour has changed as his anxiety has gone down or as he has gained mastery of the learning content. At a later date he may come to resent being treated as a dependent. Or this learner might never move from his initial dependent behaviour and our teaching behaviour would help hold him there and deny him room to develop independently.

A major difficulty in conceptualizing adult learner characteristics is that the concepts have a tendency to become fixed labels. Further

---

[1] David E. Hunt and Edmund V. Sullivan, *Between psychology and education* (Hinsdale, Ill.: Dryden Press, 1974), p. 31.

evidence which contradicts such labels may be discounted or denied. This tendency is viewed in the literature as being a serious disservice to adults. There is not much literature available which investigates specific learner characteristics and how these affect learning outcomes. There is even less information which focusses on how characteristics change over time in response to developmental changes in the learner or to changes in the environment. For example, if an adult learner enters a learning program using dependent behaviours, what environment or teacher behaviours would be most likely to help him through that dependence toward increasing independency and interdependency? We have only tentative answers to questions like this, and these come largely from the field of counselling rather than from adult education.

With this brief introduction we turn to a consideration of some of the more important characteristics of adult learners.

A. PHYSIOLOGICAL CHARACTERISTICS

Adults reach full physical maturity by their early 20s. Until the late 40s they will experience no major physical changes other than those induced by accident, illness, stress, childbirth, and life-style. From the late 40s on they will be aware of two general physical changes:

1) The sensory receptors for vision and hearing will slowly decline in acuity. In most cases these declines can be corrected, but the drop may be so slow that the individual remains unaware of the changes. Such declines affect learning by reducing sensory intake, and thus both quality and quantity of input to the learning process. Some older adults develop competent coping behaviours which utilize other senses, such as lip-reading. Others cope by using information from past experience to replace unseen or unheard material. (Botwinick, 1967, 1973; Riley et al., 1968; Warren and Warren, 1970; Kidd, 1973)

2) The speed of response of the central nervous system declines. This slowing-down is largely the result of a drop in overall energy, but is also caused by a drop in the rate at which nervous impulses are transmitted from sensory intake to motor output. Thus older adults generally require more time to learn material, although their experience and efficiency compensate somewhat. When the learning or responding must be done under pressure of time, the decline in speed of response may be further aggravated by anxiety. (Verner and Davison, 1971; Bromley, 1974)

Temporary poor health, chronic disease, fatigue, and emotional or

physical stress will further aggravate the effect of both types of decline. It should be noted that while sensory acuity and speed of response decline there is no corresponding decline in ability to learn or in the power or correctness of the learning response. (McClusky, 1970)

Learning principles

a) Adults learn best when they are in good health, are well rested, and are not under stress.

b) Adults learn best when their vision and hearing are in the best condition possible and when the learning environment can compensate for any loss of sensory acuity.

c) Adult learning is not directly related to changes in physical characteristics until after about age 40, except in the case of what might be called rehabilitative learning such as might follow illness or accident.

d) Adult learning after 40 often may be related to physical aging. The learning may be difficult to detect; for example, visual acuity may decline almost imperceptibly over a long period of time, and the techniques the adult develops in order to cope with the change may go unnoticed.

e) Adults do not learn productively when under severe time constraints. They learn best when they can set their own pace and when time pressures are kept to the minimum. The older they are, the more counter-productive time pressures become.

B. SELF-CONCEPT

The ability of human beings to form abstract ideas allows them to think about themselves and how they appear to others. The interpretation of perceived feedback both from within ourselves and from others defines the self. It is characterized as being an organized and consistent whole unit of perception. Though constantly changing, it is specific at any given moment. The individual strives to integrate all his experiences, perceptions, and ideas into the structural system of his self. It comprises both cognitive and emotional elements. The cognitive element is called the self-concept and is the individual's description of himself. The emotional element is called the self-esteem and is the way the individual feels about himself in comparison with others and with some ideal.

In terms of learning, "all new experiences for the learner are symbolized and organized into some relationship to the self, or are

ignored because there is not a perceived relationship, or are denied organization or given a distorted meaning because the experience seems inconsistent with the structure of the self"[2] and threatens it. Another method for dealing with inconsistent experiences is to abort the learning process. Whereas a child's self-concept is in the process of forming and each learning experience may vary the structure but not threaten it with fragmentation or destruction, the adult's self-concept is already formed and each learning experience has the potential for fragmenting it or partially destroying it. The adult must defend himself against this threat until he is able to perceive that the worst will not happen and that change in his self-concept can lead to positive results.

A search of the literature on adult learning and the self-concept provides the following facts and opinions about the function of the self-concept and self-esteem in adult learning:

1) Adults who value their own experience as a rich resource for further learning or whose experience is valued by others are better learners. (Landvogt, 1970; Combs, 1974; Thibodeau, 1979; Pine and Boy, 1977)

2) Adults are more concerned with whether they are changing in the direction of their own idealized self-concept than with whether they are meeting objectives established by others. If their idealized self-concept includes satisfying the standards of others, they will experience no conflict and will adopt the objectives of others. If their idealized self-concept happens to coincide with the standards of others, they will experience no conflict and proceed toward joint objectives. Any other combination of idealized self-concept and standards set by others will result in dissatisfaction on either or both sides. (Huberman, 1974; Lam, 1976)

3) Adults learn best when they are involved in developing learning objectives for themselves which are congruent with their current and idealized self-concept. (Tough, 1971; Rubin, 1969; Smith, 1976)

4) Adults with higher self-esteem and a more positive self-concept are more ready to accept change. (Klopf et al., 1969)

5) There is a positive correlation between flexibility, ego-differentiation, and self-esteem. (Klopf et al., 1969)

---

[2] J. R. Kidd, *How adults learn*, revised edition (New York: Association Press, 1973), p. 130.

6) Adults have already developed organized ways of focussing on, taking in, and processing information. These are referred to as cognitive style and are assumed to remain relatively constant and consistent throughout adulthood. (Cawley et al., 1976; McKenney and Keen, 1974; Kolb and Fry, 1975; McLaren, 1975)

7) Adults' ability to use logical judgments and their level of cognitive functioning have no significant relationship to their achievement levels on performance tests. (Bosco, 1977)

8) The learner reacts to all experience as he perceives it, not as the teacher presents it. Consumption does not equal presentation. (Kidd, 1973; Thompson, 1970)

9) The adult learner reacts to a learning experience out of an organized whole self-concept and perceives the experience as an integrated whole. Activities which support and encourage organization and integration should be part of all adult learning processes. (Kidd, 1973; Brim, 1966)

10) The self is affected by each new role taken on by the learner, and roles provide the basis for most adult learning needs. (Kidd, 1973; Brim, 1966)

11) Perhaps the most essential component of the self in relation to learning is self-seen-as-learner. If the adult thinks that learning and the adventure of change are as much a part of his life as his work and family roles, he will be much more likely to enter into learning and achieve a higher level of intellectual performance. If the adult thinks that learning is only for children or is a non-responsible status in society, he will likely not participate willingly in learning activities. The self-seen-as-learner role also appears to be an essential component in learning how to learn. (McClusky, 1970)

12) Role learning is carried out not through formal, logical, or sequential processes but through interpersonal interactions, modelling, and experimenting. The role of learner, therefore, can be learned most productively when the adult can observe and interact with other adults who use such role behaviour in normal daily activities and when he has a safe environment in which to test out similar behaviour. (Goslin, 1969)

Descriptions of the self tend to be idiosyncratic. Some difficulties are inherent in working with adult learners in that they share relatively few concepts of self. The literature relies on descriptive labels which come from personality theory. Very few adult learners would describe

themselves as "self-directed learners," and yet many of them use such behaviour. They would be more likely to describe themselves as "I am someone who figures things out for myself"--hardly a label which can be used for research purposes.

Learning principles

a) Adults enter learning activities with an organized set of descriptions and feelings about themselves which influence the learning process. The description is the self-concept; the feelings are the self-esteem.

b) A teacher working with adults needs to know how he personally conceptualizes adult learners as well as how the individual adult learners conceptualize themselves. In cases where the two conceptualizations are incongruent, the teacher should pay more attention to the learner's description of himself.

c) Adults with positive self-concept and high self-esteem are more responsive to learning and less threatened by learning environments. Adults with negative self-concept and low self-esteem are less likely to enter learning activities willingly and are often threatened by such environments.

d) Adults are more concerned with whether they are changing in the direction of their own idealized self-concept than whether they are meeting standards and objectives set for them by others.

e) Adults react to learning experiences or information as they perceive it, not as the teacher presents it.

f) Adults learn best when there are activities which allow them to organize and integrate new learnings into their self-concept.

g) The teacher of adults should be able to model behaviour which is relevant to the role of learner. This includes: valuing the role of learner as an integral part of living and as important as work, social, and family roles; using learning-how-to-learn strategies; valuing and using one's own past experience as a resource for current learning; and valuing the role of learner as a responsible status within society.

h) Adults learn best in environments which provide trusting relationships, opportunities for interpersonal interactions with both the teacher and other learners, and support and safety for testing new behaviours.

C. EMOTIONS, STRESS, AND ANXIETY

Emotion is a term used to describe various states which are both desired and not desired, which can be both terminated and not terminated by the individual's behaviour, which can make behaviour both more effective and

less effective, which can be both energizing and debilitating. Emotions have the following features in common:

- They are all special states of arousal or motivation.

- As arousal increases, so does the emotional level.

- As arousal increases, the motivation to act in organized ways increases to a maximum level and continues at this level for some time, depending on the individual and the situation; then, even though arousal may continue, motivation decreases rapidly and disorganized behaviour ensues.

- Arousal is physiological and is interpreted in the subcortical areas of the brain according to the situation involved and previous experience. The interpretation determines the type of emotion felt. (Hebb, 1972)

Stress, as described by Selye (1956), is a non-specific response to a real or perceived threat to the body or self. It involves a hormonal reaction, the purpose of which is to arouse the body to "fight or flight," to enhance sensory reception and mental functioning, and to increase the ability to cope and change. If the threat increases or cannot be terminated, the physiological response continues until exhaustion occurs. The behaviour responses which accompany this hormonal response are initial alertness and increases in organized, productive actions; followed by confusion, disorientation, and distortion of reality; then fatigue, tenseness, anxiety, and irritability; and finally withdrawal, depression, and apathy. (Toffler, 1970; Selye, 1956; Lazarus, 1966; Levi, 1972; Smith, 1975)

Anxiety is a non-specific stress response to an unlabelled fear, an unidentified source of danger. The source may be internal to the self but perceived as originating in the external world. For many adults, learning situations, schools, teachers, grades, tests, and the threat of failure or exposure of inadequacies are primary sources to which anxiety becomes attached. (Rowe, 1975)

It seems clear from these definitions that emotions, stress, and anxiety share a similar physiological process and have similar behavioural outcomes in the presence of continuing and unresolved threats to an individual. Adults and children both experience these arousal reactions, but the level, strengths, and duration of the reaction increases with intellectual capacity and with age. (Hebb, 1973, p. 206)

> ... change upsets and perhaps deeply disturbs us because it aborts [programmed responses] that used to serve well, and forces in adults the continual revision of the world-as-perceived that has always been normal in children.... Hebb and others have pointed out that adults are not really less emotional than children, but more. We feel stronger emotions, much longer. With

> experience, however, we acquire [programmed structures] for handling - and to a large degree in our society, "corking up" - the more visible emotions.[3]
>
> The adult has not fewer, but more emotional associations with factual material than do children although we usually assume he has less, because the devices of control are more elaborate and better controlled in the adult.[4]
>
> ... we are sheltered by what we call a civilized environment, within which we are not much exposed to the causes of emotional disturbance. It offers actual physical protection ... [and] also psychological protection from emotional disturbance by reducing the causes to near zero. In a "civilized environment" [an adult] never has to be in strange places in darkness.[5]

Adults have more to be threatened about than children in learning situations because their self-concept is already well organized. They stand to lose much of their previous gains in self-esteem and self-confidence if they try and fail. Many adults would prefer to not try at all and, therefore, appear to resist learning.

The issue of emotional responses, stress, and anxiety affects adult learning in the following ways:

1) Most adults start learning experiences with a high level of arousal and do not generally require further arousal to motivate learning. If the instructor adds further arousal through demands created by information overload, competition, exposure of inadequacies, discounting personal experience, and so on, the learner may withdraw or become self-defensive and appear to lack motivation. The instructor would be wise to spend some time during the first few learning sessions deliberately lowering anxiety to a manageable level. (Larson, 1970; Knowles, 1970)

2) One outcome of a prolonged stress reaction is reduced competence in communicating. Thistle (1968) indicates that the prospects for effective communication with persons in an angry or hostile state of mind are so-so and with those in an apathetic state of mind are very poor. Not only does a distressed person use fewer verbal communications, which are often disoriented and confused, and use more non-verbal communications,

---

[3]Leslie A. Hart, *How the brain works: A new understanding of human learning, emotion, and thinking* (New York: Basic Books, 1975), p. 227.

[4]Gardner Murphy, quoted in J. R. Kidd, *How adults learn*, revised edition (New York: Association Press, 1973), p. 95.

[5]Donald O. Hebb, *Textbook of psychology*, 3rd edition (Toronto: W. B. Saunders Company, 1972), p. 206.

but he also hears and sees distorted versions of reality. Learning in this condition would be distorted learning at best. Adults who have reached this level of distress tend to appear childish and immature.

3) Work reported by Toffler (1970), Katz and Kahn (1979), Bandler and Grinder (1975), and Cropley (1977) indicates that, in the presence of excessive amounts of information from the environment (sensory overload, overstimulation), the adult processes information in ways which delete, distort, oversimplify, and over-generalize. The way he processes the overload can vary from being highly productive (e.g., specializing) to highly dysfunctional (e.g., omitting, denying). In any event, the result is a set of corresponding deletions, distortions, simplifications, and generalizations in his representational model.

4) Since the arousal response can motivate an individual to be a more productive learner as well as to be defensive, stress and anxiety show up in both learning and resistance to learning. Presumably learning is more productive when there is an optimum level of arousal. In such cases, the learner would appear excited, slightly agitated, curious, perhaps a little fearful. All these behaviours can be labelled either as childish or as anxious. Yet if the instructor then proceeds to treat the adult learner as if he were childish and immature, any motivation to learn will be diverted into defensiveness and resistance. For an adult to become fully engaged in learning, he must be aroused, be relatively undefended, and be willing and able to channel his motivation into change. Adults, therefore, need a learning environment which does not threaten them and which supports and encourages them. This is facilitated by trusting relationships between the instructor and learners. (Knowles, 1970; Kidd, 1973; McClusky, 1970; Combs, 1974)

5) Some individuals learn information-processing skills which are functional at all times but particularly so in periods of overstimulation. These include employing multiple channels for processing information and learning how to learn. The skill of employing multiple channels[6] requires that an individual avoid conscious, verbalized modes of thought and use instead subconscious, non-verbalized modes of thought.

---

[6]As an example of multiple processing, in learning about adult development the information the learner is processing might be obtained through reading theory, through observing and reflecting on the developmental sequence observed in class sessions, through self-reflection on past experience, through encounters with personal descriptions in novels or films, and through many other directly or indirectly relevant experiences.

Verbal thought tends to be based on a high level of attention, a low degree of diversion and novelty in the environment, the use of specific selected information, and the use of continuity and sequence to get results. The consequences of error early in the sequence tend to be magnified in succeeding steps. Stress and information overload make this mode of thought difficult to maintain for any length of time. Non-verbal thought requires the intake of large amounts of information, a low level of direct attention, reliance on non-verbal forms of representation, and enough time to permit processing to occur without having to produce an output or reach an answer. In non-verbal thinking, order (continuity and sequence) is something that emerges as a result. Since the same information is being processed through several different channels, errors in one channel will be corrected by the results in another.

Learning how to learn involves a set of processes in which the individual learner acts at least partially as his own manager of change, and his focus of change is his own self-concept and learning processes. This requires that the learner be able to conceptualize his own learning process and be able to pay some attention to how he goes about learning. He must also be willing to trust himself to manage this process and be able to request help from someone else when necessary. This learning can only be carried out productively in situations which do not threaten the learner.

Several writers suggest that the skills involved in employing multiple channels and in learning how to learn are normal mental activities which have been deactivated by the process of formal schooling, which requires conscious, sequential, verbal modes of thought and which places a higher value on these than on the subconscious, simultaneous, non-verbal modes of thought. (Knowles, 1973; Hart, 1975) Whether the skills develop normally or are acquired through training is not clear. It is clear, however, that certain conditions increase the capacity of an individual to make use of these skills in certain situations. These are:

- the learner's perception of the situation as free from threat.
- material which is personally relevant to the learner and/or learning experiences and processes which are perceived as relevant to the learner's life experiences.
- presentation of information through a variety of sensory modes and experiences, with sufficient repetitions and variations on themes to allow fine distinctions in patterns to emerge.
- effective two-way communications with primary emphasis on learner

talking and self-reflecting and teacher listening and reflecting. (Kidd, 1973; Knowles, 1973; Hart, 1975; Norman, 1973; Denis, 1979)

6) Developing skill in meta-learning, or learning how to learn, can itself create a challenge to the adequacy of the learner's existing meanings, values, skills, and strategies. At the point of change, the learner is likely to experience internal conflict as old and new meanings or values clash and to feel disoriented as new strategies require new behaviours. It is a point at which stress can increase and the learner might abort the learning process as too risky. (More, 1974; Pine and Boy, 1977)

Learning principles

a) Adults learn best when they are stimulated, aroused, or motivated to an optimum level through internal or external sources.

b) Adults do not learn when overstimulated or when experiencing extreme stress or anxiety.

c) Adults have more, stronger, and longer emotional responses to change than do children.

d) Adults learn best in environments which provide trust relationships and freedom from threat.

e) Adults who enter into learning activities are often well motivated and generally do not require further stimulation in the form of pressure or demands from the instructor or other learners. What they may require is assistance and support to channel their motives into learning rather than into self-defence.

f) Adults who are experiencing extreme stress or anxiety may communicate poorly and process information in ways which delete, distort, oversimplify, or over-generalize.

g) Stimulation or arousal can be channelled equally well into learning or into resistance to learning.

h) Stimulation or arousal can be labelled equally well as childish and immature behaviour, as stress behaviour, or as learning behaviour depending on other aspects of the situation and the perceptions of the instructor.

i) Adults who can process information through multiple channels and have learned how to learn are the most productive learners.

j) Adults learn best when the content is personally relevant to past experience or present concerns and the learning process is relevant to life experiences.

k) Adults learn best when novel information is presented through a variety of sensory modes and experiences, with sufficient repetitions and variations on themes to allow distinctions in patterns to emerge.

l) Adults learn best through effective two-way communications which emphasize learner talking and self-reflecting and teacher listening and reflecting.

m) Adults have developed well-organized strategies for defending against threat, for covering emotional reactions. These may mask stress or anxiety but never completely alleviate it.

n) The consequences of learning can lead to disorientation and conflict which, in turn, can lead to further learning or can lead to increased stress and decreased learning.

D. PAST EXPERIENCE

Adults have more experience than children in the pragmatic realities of life. They have developed, therefore, many patterned ways of perceiving and understanding that experience and have a well-organized set of personal meanings, values, strategies, and skills which simultaneously define, create, and restrict their representational model of reality. In response to today's information explosion and accelerating change, each individual's model requires constant updating and revision, at an ever-increasing rate. There is mention in the literature of variations in the "half-life" of an adult's professional knowledge and skills.[7] For some professionals, such as computer programmers and physicists, the half-life is uncomfortably short, perhaps five years; for other professionals, such as educators, the half-life is much longer. In the first group, the major learning need is keeping up with change; in the second group, the major learning need is preventing stagnation.

Past experience is an essential component in adult learning, both as a base for new learning and as an unavoidable potential obstacle. Issues related to past experience include the following:

l) Past experience structures the ways in which an adult will approach new experiences; determines what information will be selected for further attention and how it will be interpreted; and determines what meanings, values, strategies, and skills will be employed first. If these are found to be suitable, new learning will proceed efficiently and productively. If these are found to be unsuitable, the adult will first search back through all previous experience for some suitable material which can be applied indirectly. If nothing can be found, then

---

[7]This concept was noted in the literature search, but the key reference was not appended to the note and cannot be included here.

the adult is faced with a considerable challenge: to acknowledge the inadequacy of the meanings, values, skills, and strategies he already has and thereby question his self-concept as a competent person, and to then trust himself to enter into learning which will result in an as yet unknown transformation of that self-concept. The first part represents in some sense a failure of the self-concept which already exists, and the second represents a risk of new failure. The paradox for the adult is that while he must allow his self-concept to undergo partial change, he must trust that same self-concept to manage the change. As a way to avoid all potential feelings of failure, he can withdraw from the situation by rejecting the validity, value, and necessity of learning anything.

2) Past experience always enters into adult learning, unless the learning experience or content is wholly new to the learner. Adult learning, therefore, focusses on modifying, transforming, and reintegrating meanings, values, strategies, and skills, rather than on forming and accumulating them as in childhood. The learning processes involved in transformations are different from those involved in formations. Very little could be found in the literature on the basic differences between the two. Freire (1973), Hart (1975), and Mezirow (1978) suggest that some of the major characteristics are:

- Transformations require greater input of energy, because the body invests considerable energy in maintaining established patterns, which must be overcome first if a pattern is to be transformed.

- Transformations require more time than formations.

- Transformations require that established meanings, values, skills, and strategies be raised to a conscious level and be thoroughly examined before being altered.

- Transformations require that the related new behaviour be tested out in "safe" situations before being put into use in daily life, in order to reduce potential threat to the self.

- Transformations require that the learner be aware of both figure and ground and be able to perceive relationships between the two. All experience can be organized and patterned into an endless variety of realities depending on what is selected as the central pattern to which all other sub-patterns are related. This central pattern becomes the figure and all other information becomes the ground. Transformations are based on raising these figure-ground relationships to the level of consciousness and then reorganizing them on some new basis by bringing some of the ground forward and moving some of the figure back. This process tends to lead to an awareness of distorted and repressed realities and to actions which attempt to correct them. Learning of this type has a strong tendency to lead to increased political awareness of social structures and processes and to social action. (Merleau-Ponty, 1962; Bates, 1979; Denis, 1979; Taylor, 1979; Sinnett, in progress)

3) When we base learning principles on the notion that adults have past experiences which form the basis of all learning, we may also be presupposing that all adult learners have all the meanings, values, skills, and strategies necessary for current learning and that they acquired these in childhood or adolescence. Such assumptions are not tested often enough and may prove erroneous. For example, work by Piaget suggests that adults have attained the formal operational stage of thinking (generalized and abstract). However, tests show that the average adult is functioning at the concrete operational stage (concrete and specific). The results from these tests do not indicate whether being at the concrete stage represents non-attainment of the formal stage or regression in response to environmental conditions (Thibodeau, 1979). If we proceed with adult learning activities assuming that all participants have all the necessary experience and we later discover some are missing essential components, we are likely to perceive the latter as incompetent, ignorant, stupid, stubborn, unmotivated, or even deviant. Such perceptions would be rapidly communicated to these learners through our non-verbal behaviour, creating further stress for them. Probably every adult program should, at some point, include an assessment of the individual's learning background so that missing components can be identified.

4) While past experience is an essential component in adult learning, using it in relation to current learning presents a problem. Many adults cannot perceive connections between past experiences and current problems; only some parts of past experience are relevant, and if these parts are stored as it were in compartments labelled according to specific contexts, the learner may need to be helped to return to the original raw data so that he can reinterpret the experience in new connections. Feringer (1978) and Ornstein (1972) suggest that past experience can be used most productively when it becomes the basis for analogy or metaphor. Thus what appears to be a non-logical, non-rational approach to learning can be a method for making logical, rational sense of current experience. Their view implies that adult learning which requires that previous experience be transformed proceeds most effectively through exposure to such processes as synectics, brainstorming, analogies, games, simulations, mythology, case studies, and so on, all of which can be described as divergent, non-sequential cognitive processes. When these are used in combination with convergent, sequential cognitive processes, adult learning based on past experience becomes most productive. (Feringer, 1978; Denis, 1979)

Learning principles

a) Adults learn most productively when the material being learned or the processes being used bear some perceived relationship to past experience, or when past experience can be applied directly to new situations.

b) Past experience presents the adult learner with a paradox. In the learning experience, the meanings, values, strategies, and skills based on past experience and forming part of the present self-concept are being changed. These changes may, in turn, damage or threaten the self-concept. At the same time, the self-concept must be a trusted agent in managing the learning process.

c) Adult learning focusses largely on transforming meanings, values, strategies, and skills derived from past experience. This process requires more energy and more time than learning based on formation of new learnings. It also requires that past experience be raised to the level of consciousness; that both figure and ground be examined for relationships; and that new behaviours be tested in safe and trusted environments.

d) The past experience of adult learners must be acknowledged as an active component in learning, respected as a potential resource for learning, and accepted as a valid representation of the learner's experience. Past experience can be both an enhancement to new learning and an unavoidable obstacle.

e) All adults do not necessarily possess all the meanings, values, strategies, and skills required for new learning activities. Acquisition of the missing components must be regarded as an essential activity in all learning experiences. Assessment of learner needs in this regard should be part of every adult learning experience and should concentrate on identifying each individual's strengths and weaknesses, since every individual will have unique past experiences.

f) Past experience can be most productively employed in current learning when divergent, non-sequential, non-logical cognitive processes, such as analogies and metaphors, are used to connect it to present experience.

E. TIME

The time perspective of adult learners appears to be different from that of children. An adult tends to perceive time as including an ever-increasing past, a fleeting and pressured present, and a finite future. A child tends to perceive time as including a present and an infinite future. Children and young adults tend to measure time as "time since birth"; adults past 40 tend to measure time as "time until death." This shift from an increasing span of time to a decreasing one has consequences for learning. The ever-increasing past provides an ever-increasing model of reality which can both help and hinder learning.

The larger and more enriched it becomes, the greater its potential for helping or hindering. The fleeting present involves many conflicting concerns, needs, drives, and problems. These conflicts become essential content to the learning process. The solutions to current problems, while often readily apparent to an observer, must come from within and be consistent with the individual's map of reality and be implemented from his own resources. Solutions which do not "fit" are generally rejected. The pressures on an adult to resolve conflicts and solve problems quickly make the discovery of personally meaningful solutions that much more difficult to accomplish. The finite future tends to create the illusion of a need to hurry, to change and learn quickly, and to get on with life. This illusion grows out of our traditional beliefs that learning and education are once-in-a-lifetime activities which will provide for all future contingencies, and that learning is an activity distinct and separate from living and working. (Kidd, 1973; McClusky, 1970)

Learning principles

a) Adult learning focusses on the problems of the immediate present. Learning content should be derived from the learner's needs.

b) Past experience becomes increasingly important as an adult grows older. Its potential for helping or hindering the learning process also increases with age.

c) When learning focusses on problem-solving, the solutions must come from, or be congruent with, the learner's experience, expectations, and potential resources, rather than being prescribed by an "expert."

d) Adults tend to experience a need to learn quickly and get on with living. They are often reluctant to engage in learning activities or content which does not appear to have immediate and pragmatic application within their life.

F. MOTIVATION

Motivation is an all-purpose term which is defined as a tendency within a person to produce organized behaviour. This behaviour allows the individual to move in response to his internal or external environment so as to ensure his own and his communal group's survival and satisfaction. In biological terms, human behaviour is motivated by five basic tendencies--hunger, pain, sex, maternal, and exploratory motives. In social and psychological terms, human behaviour is motivated by the need for survival and satisfaction but is extremely complex because of the

number of variables which are involved. For the purposes of this report we have attempted to reduce motivation to some highly simplified concerns.

1) Motivation can be described as being either the drive for reduction of unmet needs or the drive for positive growth. Reduction of needs describes those motives which arise when something is absent or deficient in the individual's life. Adults who are working on reducing unmet needs may arrive at the learning experience feeling threatened by others whom they see as taking control, and feeling powerless or incompetent to change the conditions of their lives. They may indeed be threatened, and may be there as non-voluntary learners. Such adults may require structured learning experiences, extensive help in determining their own directions, and prolonged support. They probably need both feedback and reinforcement from the teacher. Once their initial threat or anxiety has been resolved or reduced, they can be assisted toward responsibility for their own structure, direction, feedback, and reinforcement.

The drive for positive growth presupposes, not an adversive set of existing conditions which need to be changed, but a potential positive outcome which will reward the individual when he seeks and obtains it. Maslow (1970) suggests that people cannot move toward these positive goals until the adversive conditions have been reduced. He describes the adversive conditions as "deficit needs" and the positive goals as "growth or being needs." Deficit needs focus on survival and security tendencies, growth needs on belongingness, self-esteem, and self-actualizing tendencies.

Gibb (1964) suggests that the two types of needs are not mutually exclusive and that as one increases in strength and priority, the other decreases. Teaching strategies can focus on reducing deficit needs first, thus freeing the learner to pursue growth goals; on facilitating the pursuit of the growth goals that would enable the learner to deal with deficit needs; or on some combination of these.

Growth needs relate to such personal goals as improving job skills, getting a salary increase, developing professionally, meeting new people, developing trust relationships, learning for the pleasure of learning, expanding knowledge, entending oneself, and so on. Adults who attend learning experiences on the basis of personal growth in the direction of positive goals tend to be relaxed, do not require much structure or direction from teachers, and are able to negotiate and plan their own structure, directions, feedback, and reinforcement with minimal assistance. (Kidd, 1973; Maslow, 1970; Gibb, 1964).

2) Motivation can be described as the individual's organizing behaviour in terms of two basic tendencies: (i) a tendency to function autonomously or independently in his environment, and to control the conditions of his existence within that environment, and (ii) a tendency to function harmoniously in interdependent relationships with others in pairs or in groups.

In the literature, the trend to autonomous, independent behaviour is variously referred to as achievement needs, instrumental participation, career-oriented learning needs, and self-confidence needs, among others. This trend is accompanied by the need to reduce threats to autonomous functioning, to reduce feelings of powerlessness and incompetence, to build competent, skilled performance, and to improve self-esteem and self-concept.

The trend to interdependent behaviour is variously referred to as affiliation needs, expressive participation, social-oriented learning needs, and acceptance needs, among others. This trend is accompanied by the need to reduce threats to one's secure place within communal groups, to reduce isolation and alienation, to build and improve interpersonal relationships, and to create and maintain communal groups.

Both these trends arise from the dependency behaviours and needs of childhood. Adult educators tend to assume that all adults have gotten over being dependent. In fact, many adults prefer to use dependent behaviours rather than independent or interdependent behaviours; and most adults use dependent behaviours in situations which could be described as novel, emergency, or traumatic to them. Thus a third tendency in motivation, a tendency to dependent behaviour, should probably be considered in conjunction with the first two.

Each of these three tendencies includes a variety of more specific behaviours. For example, interdependence (Schutz, 1966) includes issues related to inclusion within the group, control over self and others, and affection or closeness to others. Each tendency can be thought of as a continuum of behaviours which ranges from too great a need to too little need for that particular behaviour. For example, too great a need for dependence is described as unilateral dependence; too little need, as counterdependence. Each adult generally is capable of a variety and range of behaviours which vary according to his current feelings about himself, the current problems, conditions, or demands of his environment, and his perceptions of his immediate and future needs. (Jones, 1969; Kidd, 1973; Morstain and Smart, 1977; Schutz, 1967; Gibb, 1964)

3) Motivation is connected both to success (or failure) in reaching desired outcomes or changing adverse conditions and to the feelings of satisfaction (or dissatisfaction) which attend such progress. Satisfaction and success are not separate issues. Both are related to progress away from entry conditions and toward anticipated or desired conditions.

The deficit or growth needs or motives with which a learner enters a learning program determine his initial participation in the activities. Thereafter, his motives for continuing in the program will depend on whether he feels he is moving toward his anticipated or desired outcomes. To be able to see his own progress, the learner must receive frequent information about changes in either his behaviour or his environment relative to what he anticipated or desired. Information which describes the results of change is referred to as feedback. When feedback is specific in describing changes relative to planned changes, it leads to an awareness of success of failure. Knowledge of success or failure is accompanied by feelings of satisfaction or dissatisfaction, and it is these feelings which then become powerful motives for further learning or for withdrawal.

Lam (1976) has shown that satisfaction is derived from group processes and from both formal and informal interpersonal interactions and not from increased comprehension or absorption of information. The process of clarifying educational needs which can be met through specific learning activities and for which specific feedback can be provided is essential for eventual feelings of satisfaction.

If a teacher assumes that motivation is based primarily on the learner's knowing where he is now (existing conditions, needs, problems) and where he wants or needs to move to (objectives, goals), then the teacher may design learning activities which utilize an initial high motivation level but may pay scant attention to maintaining this level through remaining sessions. When initial motivation is high, the learner may have enough drive to complete the program without further input. The chances are great, particularly with adult learners who also hold jobs and take care of families, that initial motivation levels will drop and new energy must be generated through the learning activities.

If the teacher assumes that motivation is based primarily on the learner's knowing the results of his own learning (outcomes in relation to objectives) and on the learner's feelings associated with those results, then the teacher may design learning activities which provide

opportunities for feedback to the learner about changes in his behaviour or environment. Feedback can come from the teacher, from other learners, from a non-human resource (as in biofeedback), or from the learner's observations about his own behaviour and environment. Feedback which is spread throughout the learning program can assist in maintaining learner motivation levels. (Kidd, 1973; Lam, 1974; CERLI, 1969; Bortner, 1974)

4) What seems most clear in the discussions on motivation is that the tendencies which are labelled "motives" arise from within the learner. They are not something added on by an external agent, although the actions of the agent may tend to help or hinder already existing motives. The behaviour of the external agent must be viewed as contributing either to feedback or to reinforcement and by this route indirectly to further motivation. The most suitable teacher functions, therefore, must be:

- discovering, through consultation, what the prime motives and specific learning needs of each individual learner are;
- assisting the learner to establish specific objectives which can be translated into specific behaviours and hence into specific feedback;
- providing feedback on the basis of these decisions;
- allowing the feelings of success and satisfaction from these processes to be the major reinforcers of learning.

(CERLI, 1969; Arends et al., 1978; Rubin, 1969)

5) Feedback can only be provided following activity by the learner which permits him to test out new behaviour. Feelings of success, therefore, are available to the learner only after that point in the learning process. If this point comes early in the session, then the good feelings from success will motivate the remainder of that session. If this point comes at the end of a session, then the good feelings may have dissipated before the next session. If feedback is delayed, the learner may have trouble connecting it to the behaviour he was testing out. As the time lapse between action and feedback increases, the impact and reinforcement from feedback decreases, as does its value for further motivation. (Arends et al., 1978; Coleman, 1976)

6) Involving adults in clarifying their own ambiguous felt needs and in defining clear learning needs is acknowledged as one of the most important aspects of adult learning. Most adults, however, have little experience in even verbalizing their own needs, let alone turning them into learning objectives. They are often embarrassed about expressing their needs in front of others and do not communicate them unless there

is some personal crisis or external reason for doing so. If adults are asked to complete a needs assessment instrument, they are likely to respond as an "average adult" rather than as themselves or to give the answers which they assume the assessor wants to hear. Adults may need, therefore, considerable assistance and support in verbalizing, clarifying, and specifying their learning needs. (Arends et al., 1978)

Learning principles

a) Motives are the felt needs with which a learner starts a learning activity. They may relate to unmet needs or unwanted conditions in life and to the pursuit of positive growth toward desired goals. As the learner proceeds toward meeting unmet needs, resolving unwanted conditions, or reaching desired goals, the motives for learning tend to change in relation to any feelings and experiences of success/failure and satisfaction/ dissatisfaction.

b) Adults who begin with motives related to unmet needs or unwanted conditions within their life are likely to feel more threatened and to require more teacher support and structure and extensive assistance in clarifying and establishing their own directions and goals. This process of clarifying learning needs and goals contributes to feelings of satisfaction or dissatisfaction.

c) Once directions and goals have been clearly identified, behavioural objectives can be developed which will guide the learner and the teacher in seeking and giving feedback. This feedback contributes to feelings of success or failure. It also provides real information for the guidance of learning.

d) Success and satisfaction become reinforcers for learning and motives for further learning.

e) Teacher behaviours can contribute most productively to clarifying directions and specific objectives and to providing feedback; such behaviours lead to learner success and satisfaction. In this way, teachers can indirectly motivate learners to further learning. Teachers cannot directly motivate learners as they start learning experiences.

f) While adults have the verbal capability to clarify and specify their own learning needs, they are often reluctant to do so and may need assistance in the process.

G. PARADOX AS AN ESSENTIAL ASPECT OF ADULTHOOD

One essential aspect of adulthood is that the adult needs to be able to cope with and respond to diversities, contradictions, dilemmas, and paradoxes. Several writers describe this aspect in different terms:

> The family of words related to the designation "adult" attests ... to a state of having matured *(alescere)* in height and in stature

> and of having reached the stage of one who now nourishes *(alere)* what he bears and produces. But this means that what has developed in stages must now fit into the structure of an integrated world view which permits the vulnerabilities of human childhood to be turned into generational strengths....
>
> ... As I have put it in my Jefferson Lectures, there seem to be two poles to human endeavour, namely, the felt necessity to "survive and kill" where both the territorial survival and the cultural identity of a human subspecies seem to depend on the defensive or offensive exclusion of [all] others; and the precept "die and become" where, on the contrary, ascetic self-denial to the point of self-sacrifice appears to be the only means to becoming more inclusively human.[8]

> We come now to the seventh phase of the life cycle, adulthood.... Perhaps nature's design in all along requiring the growing person to find continuity in discontinuity may reveal itself at this juncture. For, as we approach the time when we might pursue self-indulgences more ably than ever before, we tend to lose interest in ourselves in favour of the interests of progeny, ... even if only by default....
>
> The cognitive and imaginal skills specific to this phase centre around tolerance (for ambiguity, for diversity, for alternation, for paradox) and generativity - the rudiments of what may become "wisdom".
>
> The social modalities specific to adulthood are the modalities of service.... The concept of mutuality states that while children need, adults need to be needed, and that both needs are of like urgency within their developmental contexts.... I have been much impressed with how often in teachers' conferences ... it is exclusively the needs of the children that come into discussions of how to improve learning, when it should be obvious to all that the needs of the teacher are as germane to the problem.[9]

> Every person always thinks that he is right, but [we can see] that such a claim is the equivalent of an iron filing proclaiming that it is the total magnetic field. In terms of the total field, an individual cannot be a container of the truth; his action can only embody certain aspects of the truth.... The truth is what emerges in the field ... as one man engages his opposite in conflict.... Every creation is preceded by the right kind of chaos....[10]

In adult learning, the issue of paradox presents the following concerns:

1) One of the basic paradoxes is maintaining a dynamic equilibrium

---

[8] Erik H. Erikson, *Adulthood* (New York: W. W. Norton, 1976), pp. 20-21.

[9] Richard M. Jones, *Fantasy and feeling in education* (New York: Harper Colophon Books, 1968).

[10] William I. Thompson, *At the edge of history* (New York: Harper Colophon Books, 1971), pp. 116-121.

between stability and change. Pressures for change come from both internal and external sources. To maintain a sense of personal consistent stability in response to these pressures, the individual must engage in initiating continuing change both in his own behaviour and in his environment. To achieve stability, the individual must change; to achieve change, the individual must experience and respond to instability and uncertainty.

2) A second basic paradox is that to achieve change the learner must expose himself to the threat of failure and loss of self-esteem. If he chooses to avoid this threat by not responding to pressures for change, he exposes himself to the threat of failure from stagnation, redundancy, ineffectiveness, or obsolescence, or, if the change is required in an interpersonal relationship, to the threat of the other person's withdrawing in discouragement.

3) A third paradox is that by learning new or updated knowledge, values, skills, and strategies, the learner becomes more competent and worthy. His growth might in turn price him out of the job market, over-qualify him for his current work, or throw his personal relationships out of balance. The intrinsic value of the learning must be weighed against the extrinsic value it has in the individual's environment.

4) Finally, the adult's need to be needed has the potential to place him in a dependency position in relation to those with needs to be filled. If adults learn most readily that which is relevant to their current developmental concerns and these include needing to be needed, the dependency component of this need may come into conflict with assumptions and expectations adults have about themselves as independent learners. Can one learn a set of behaviours which require a certain degree of dependency by behaving independently as a learner? The resolution to this dilemma is for the learner and teacher to work out and use inter-dependent modes of behaviour.

5) The work of Argyris (1969) uses the paradoxical need of humans for both stability and change, for consistency and inconsistency, for connectedness to and separateness from others, to develop a typology of human behaviours. He describes two classes of behaviour which are at opposite ends of a continuum. At one end of this continuum we find people who use "pattern A" behaviours, which reflect a high need for certainty, unity, stability, and consistency; a tendency to compare self to an external standard; a tendency to work toward reducing imbalance in cognitive inconsistencies and discrepancies (i.e., problems); and a

tendency to judge the intentions and actions of others on the basis of a comparison to one's own intentions and actions. Pattern A people, as learners, want problems to have solutions and questions to have answers, prefer one right answer rather than several equally likely alternatives, and become increasingly angry as inconsistencies and uncertainty increase. They tend to be hard-working, to sleep less and dream less than others, and to be more susceptible to stress factors.

At the other end of this continuum we find people who use "pattern B" behaviours, which reflect a tolerance for ambiguity, diversity, instability, and inconsistency; a tendency to compare self to an internal standard; a tendency to deliberately seek out imbalance in cognitive inconsistencies and discrepancies; and a tendency to refrain from judging the intentions and actions of others on any basis. Pattern B people, as learners, tend to seek and find problems in the form of issues and to ask questions and to prefer alternative answers without having to find the "right" answers. They tend to be relaxed, trusting, and open in their interpersonal relationships and to be less susceptible to stress factors.

Somewhere in the middle range of this continuum is the capacity both for flexible behaviours in response to diversity and ambiguity and for practical and effective problem-solving behaviours. A person who is able to function in both styles would be able to make continuous changes in response to pressures for change and make decisions for action when a specific issue must be solved. (Gould, 1978; Erikson, 1978; Jones, 1968; Watzlawick, 1974; Schon, 1971; Thompson, 1971; Argyris, 1969; Ingalls, 1973)

Learning principles

a) As an adult learns, he needs to be able to cope with paradoxical situations in which change and stability, dependency and independency, are all required. In such situations, the adult needs to be able to use question-asking and -answering behaviours, problem-finding and -solving approaches, an openness to new information, and a willingness to make a decision or reach tentative closure. A diversity of behaviours is facilitated by an adult teacher who is also willing and able to remain flexible, open to alternatives, and tolerant of ambiguity, diversity, inconsistency, and instability rather than becoming defensive or angry.

b) The adult learner may respond to ambiguity and instability with increased anger and self-defence. Since ambiguity and instability are seen as necessary for learning, anger will often be a basic component of any learning activity.

H. LEARNING STYLES AND ABILITIES

The literature on adult learning provides extensive investigations into the characteristic ways in which adults take in information; select certain information for further processing; use meanings, values, skills, and strategies to solve problems, make decisions, and create new meanings; and change any or all of these activities or structures. A style is the preferred way each individual organizes experience. Consistent individual differences in the ways of *organizing* experiences into meanings, values, skills, and strategies are called cognitive styles. Consistent individual differences in the ways of *changing* meanings, values, skills, and strategies are called learning styles. Style is distinct from performance level or ability and is viewed as a relatively stable characteristic trait which affects everything else the individual does. There is some evidence that cognitive and learning styles are closely related to personality structure, and at least one theory (Harvey, Hunt, and Schroder, 1961) is used to investigate both cognition and personality. Ability generally refers to the content of thought or to what we know; style refers to how we know it (Messick, 1976). Because there is such extensive literature on the topic, we have chosen to focus on general principles and to limit specific issues to those directly related to other parts of this report.

1) Every adult has his own individualistic style for processing information and for learning and his own individual level and type of ability. Every adult is both similar to and different from every other adult, in ways which vary for each comparison. Every group of adult learners will therefore be extremely heterogeneous in nature, and every individual within the group will be a complex mixture of style and ability. The teacher of adults cannot assume that a group of adults of the same sex and age with similar social, economic, and educational characteristics will share common learning styles or abilities. (Cawley et al., 1976; Messick, 1976; Even, 1978; McKenney and Keen, 1974)

2) The literature does not predict how individual adults develop their learning styles, but it has a good deal to say about how each style will create different meaningful patterns out of the same experience. For example:

> Field independence versus field dependence refers to a consistent mode of approaching the environment in analytical as opposed to global terms. It denotes a tendency to articulate figures as discrete from their backgrounds and a facility in differentiating objects from embedding contexts, as opposed to a counter-

> tendency to experience events globally in an undifferentiated fashion. The field-independent pole includes competence in analytical functioning combined with an impersonal orientation, while the field-dependent pole reflects correspondingly less competence in analytical functioning combined with greater social orientation and social skills.[11]

If both types of learners participate in the same experience, each is likely to perceive the experience differently and develop different interpretations based on those perceptions. One way to facilitate learning might be to direct the learner's attention to his own characteristic way of perceiving and to that aspect of experience he is not perceiving.

The literature does not provide us with any techniques for actually changing the learner's cognitive style. (Messick, 1976; Even, 1978)

3) The teacher of adults, therefore, is faced with a dilemma. In preparing learning material or experiences, does he favour one style over another? How can he accommodate both styles simultaneously? The answer appears to lie in the teacher's being aware of his own style and how this affects the processes he uses in helping individual learners. If a field-independent teacher is trying to assist a field-dependent learner in understanding an experience, he needs to be aware of how he and the learner are functioning in different styles and of how the two styles are addressing different sets of information. He also needs to acquire some deliberate skills in facilitating the learner's style. (Even, 1978)

4) In the literature, we find some notion of the problems and outcomes of matching teacher style to learner style. The work of Hunt (1971) in this regard is typical. Hunt focusses on a cognitive dimension related to the level of complexity used in carrying out mental processes. He postulates that this dimension develops with time and maturity from categorical to unidimensional to multidimensional thinking and that there are at least four different levels involved. A learner-preferred match will occur if the teacher and learner are at the same level of complexity. Such a match leads to learning of the type associated with that level and to satisfaction. A mismatch will occur if teacher and learner are at different levels of complexity. These mismatches are of different types. If the teacher is at a lower level than the learner, the learner will be dissatisfied and may withdraw. If the teacher is one level higher than the learner, the learner will experience discomfort; he

---

[11] Samuel Messick, "Personality consistencies in cognition and creativity," in Messick and Associates (eds.), *Individuality in learning* (San Francisco: Jossey-Bass, 1976), p. 14.

may withdraw or he may be encouraged to develop to the teacher's level and will thereby experience satisfaction. If the teacher is two levels above the learner, the learner will feel confused and threatened and will probably withdraw.

Other theories suggest similar types of matching, although not all theories postulate a developmental match. Joyce and Weil (1972) suggest that a teacher can learn to use other cognitive and learning styles so as to accommodate the needs of individual learners. (Hunt, 1971; Hunt and Sullivan, 1974; Kidd, 1973)

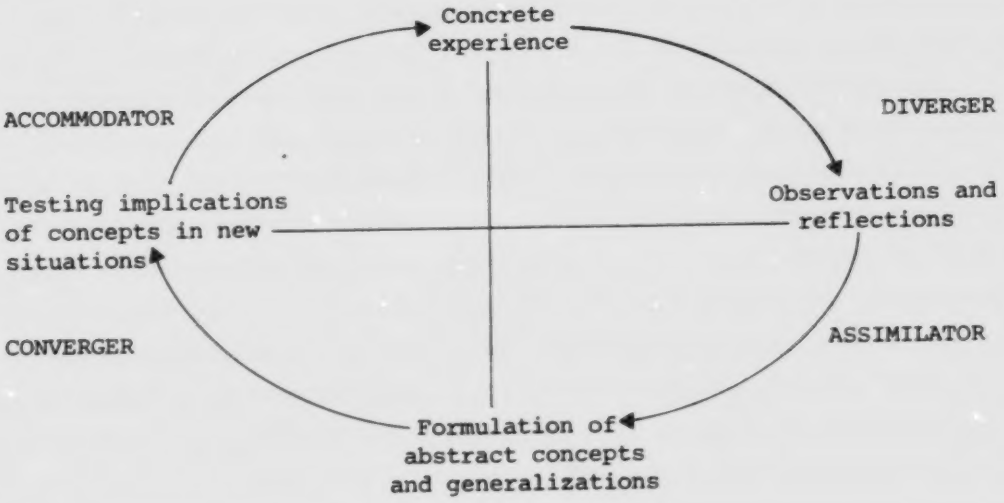
5) Cognitive styles and learning styles are theoretically value-neutral. There is no "one best way to learn." Adults of all types and styles manage to learn quite productively. Each style is adaptive in some situations and dysfunctional in others. Individual teachers and institutions, however, may favour one style over another and place a lower value on the other. (Even, 1978)

6) Adults tend to self-select learning situations and teaching-learning relationships which enhance their own learning style. They appear to be very proficient at knowing intuitively which teachers and which learning situations are not for them.

7) In relation to the field of adult education, cognitive and learning style research has not yet addressed the issue of the self-directed, independent learner. It seems reasonable to assume, for example, that field-independent adults will be more likely to be self-directed and independent as learners than field-dependent adults. If this is true, then the major thrust of adult education which calls for and supports self-directed, independent learners may be ignoring the needs of field-dependent learners. If current theory, which suggests that these traits of style are relatively immune to change, is also true, then we may experience difficulties in helping all adults become self-directed. Furthermore, the literature suggests that the best teachers for self-directed learners are those who are warm, caring, supportive, friendly, and non-judgmental. These are characteristics more often found in field-dependent adults. Some writers therefore may be recommending a mis-match in cognitive styles which other writers predict will lead to dissatisfaction. More research needs to be done in this area. (Even, 1978)

8) Other theorists in learning style research (Kolb and Fry, 1975; Taylor, 1979) indicate that, while adults enter learning experiences with preferred styles and tend to start there, they also use other styles although less often and perhaps less productively. As viewed by these

theorists, learning is cyclical, with each learner moving through a series of cognitive or learning activities which all contribute to overall learning. Some of these activities will be preferred; others will be ignored or avoided. We have included the learning cycle proposed by Kolb and Fry (1975) as a means for discussing issues related to the entire learning process (see diagram).



Kolb and Fry utilize this model in two ways:

First, they view it as a cyclical process of learning activities in which the learner can begin at any activity and proceed around the circle. For fully integrated learning to occur, all activities must be involved at some time. Overall change occurs when the cycles become spirals and the individual moves toward a desired goal.

Second, they view it as a two-dimensional model of learning style. The first dimension varies along the vertical axis and relates to conceptualizing processes which range from concrete to abstract. This is considered as the major dimension along which learning occurs. The learner moves from a focus on immediate experience to representation experience, from concrete facts to abstract ideas. The second dimension varies along the horizontal axis and relates to cognitive manipulations varying from active to reflective. This is considered as the second major dimension along which learning occurs. The learner moves from actively manipulating real objects through overt actions to passively manipulating symbols and images through covert actions.

These two dimensions form a grid with four quadrants, each representing a learning style (shown in capital letters in the diagram). An

individual's preferred learning style will predict which activities he will engage in willingly and which he will likely avoid.

This theoretical construct provides us with some essential features of adult learning. For example:

- The activities are orderly and cyclical and move in the same general direction. Several writers note that it is extremely difficult to move from abstractions to concrete instances through reflection. It is clearly easier to make this move through active experiences. (Coleman, 1975)

- Adult learners will have their preferred starting places and will show individual patterns in regard to how much time they spend on each activity. Those who are convergers may spend less than 1% of their time on observation.

- Teachers tend to start with the activity they most prefer as learners, on the assumption that this is the "best" activity to start a program. Their preparation, therefore, must focus on the previous step and on how to present it so that learning activities can get off on the right foot. The activity chosen as a starting point will have a profound effect on the remainder of the process.

- Who provides the input, who directs the activity, where the learning process starts, and where it is expected to go are determined by separate decisions. The learner, the teachers, or both acting cooperatively can take responsibility for these decisions.

- Feedback can occur only when the learner uses overt behaviour, which occurs at the testing step. Learners who prefer observation may have trouble getting enough feedback to guide their future learning. Teachers who prefer observation may provide obstacles for their learners. Each activity has strengths and weaknesses.

9) While there is considerable literature related to theoretical considerations of intelligence and mental ability, there is less on the implications of these factors for practical learning. It is possible that, since adults seem able to compensate for variations in mental ability with more efficient learning strategies, there is no problem to capture researchers' attention. It is also possible that researchers are reluctant to confront the suggestion that adult intelligence declines, however slowly, with age. In point of fact, performance on intelligence tests does decline but not as a total unit. Verbal intelligence tends to increase or remain constant, while non-verbal performance declines. The overall scores show a slow but steady decline after 50 years of age. There appear to be two major issues involved: What part of mental ability is affected by aging? What effect does age-related change have on learning?

Provided we do not make the mistake of comparing adults to

adolescents or of testing adults who have been out of school for some time on test forms designed to measure school-related ability, then we can say, in general, the following:

- Age-related declines in mental ability appear to occur in those aspects of mental functioning which are based on physical factors. Memory, speed of mental response, and speed of motor output are three such aspects. A fourth aspect of mental functioning which appears to decline is that which involves transferring meanings, values, skills, and strategies from past experiences to current situations not directly related in content or context. Situations which have a high degree of novelty or a lack of familiarity for the learner are particularly vulnerable to age-related declines. Mental functions which are based on physical factors and transference skills are also the most vulnerable to general declines as a result of poor health, excessive stress, drug use, and fatigue.

- Age-related declines in mental ability do not occur in those aspects of mental functioning which are based on accumulated experience directly relevant to current situations. When the learner's store of proven meanings, values, skills, and strategies, which were successful in past problem-solving and learning, can be directly applied to the content and context of the current situation, then no decline in ability is likely to occur.

As the average adult ages, we find that he is less motivated to learn wholly new things or to participate in wholly new experiences. He is motivated to maintain what he has already attained. Older adults (over 50 years) learn well when they can apply their previous experience directly, when they do not have to rely solely on memory, when there are not time pressures, when their overall health is good, when novel experiences and information are kept to a minimum or at least are perceived to bear some relationship to past experience and current needs, and when their accumulated storehouse of meanings, values, and strategies are respected and utilized as a learning resource. We have already noted that these same conditions hold true to some extent for adults of all ages. However, they increase in importance as the learner grows older. There are some older adults who do not fit this generalized description.

Learning principles

a) Adult learners each have individualistic learning and cognitive styles and mental abilities.

b) A group of adult learners will be heterogeneous in terms of learning and cognitive styles and mental abilities.

c) The teacher of adults must be willing and able to respond to

each learning and cognitive style and must be aware of his own styles and of how these affect the processes he uses to assist learners.

d) When a mismatch occurs between the learning/cognitive style of the learner and that of the teacher, the result is likely to be unsatisfactory to both.

e) For cognitive styles which involve a developmental process, there are two types of match between styles. One involves teacher and learner at the same level of development and results in satisfaction. The other involves teacher at one level higher than learner and results in development of the learner.

f) Cognitive and learning styles are value-neutral. There is no "one best way to learn."

g) Adults tend to be proficient at self-selecting those learning situations and teaching-learning interactions which best enhance their own learning/cognitive styles.

h) Learning activities are cyclical, sequential, and unidirectional in their natural order. Learning activities which defy this order are less productive.

i) Adult learners prefer to start with the learning activities they are most comfortable with and to avoid those they see as difficult.

j) Teachers tend to start teaching activities with their own preferred learning activity.

k) The starting activity will determine what the teaching preparation must focus on and what the remainder of the teaching activities will look like.

l) Adult learners and their teachers can share the responsibility for such teaching-related activities as providing input, creating learning experiences, directing activity, and deciding on directions and objectives.

m) Feedback can occur only after the learner has acted overtly. The later the action and feedback come in the learning activities and/or the farther apart the action and feedback are in time, the less likely it is that feedback will contribute to satisfaction and success.

n) Each cognitive/learning style is adaptive in some situations and dysfunctional in others.

o) Cognitive/learning styles are not related to intelligence, mental ability, or actual performance.

p) Overall mental ability generally declines with age after 50 years. Verbal ability does not decline and many even increase, but non-verbal performance does.

q) Age-related declines in mental ability occur in those aspects of mental functioning which are based on physical factors and which involve the transference of meanings, values, skills, and strategies from past experiences to apparently unrelated current experiences and

to novel, unfamiliar situations. There is no age-related decline in those mental abilities which utilize direct application of existing meanings, values, skills, and strategies.

I. DEVELOPMENTAL STAGES AND TRANSITIONS

There has been a small explosion recently in the available literature on developmental issues. So far the theories have not focussed on learning issues. However, we can use some of this literature to propose some assumptions about how development and adult learning are related.

There are basically three types of developmental theories. The first deals with development which occurs over a lifetime and is based largely on age-related issues in physical, social, and psychological areas. The second deals with development which occurs in relation to specific events having a finite time frame; while the various theories of this type address different situations, the theories themselves all have some similarities. The third deals with development in relation to a specific cognitive or learning style, or to a personality trait. All three types of theories share one issue in common. Each makes a distinction between periods of stability when the individual is not changing but is consolidating previous changes or preparing for future changes, and periods of transition when the individual is de-stabilized and moving from one state to another. This distinction follows Lewin's theory of change, which postulates three stages in any change process: (1) awareness of a need to change, or "unfreezing"; (2) dealing with the need to change in positive ways so as to reach desired goals or move in preferred directions; and (3) consolidation and integration of the changes into other aspects of life, or "refreezing."

We discussed developmental concerns related to cognitive/learning styles in the previous section. The concept of matching models which support both stability and development can also be found in the work of Kohlberg on moral development and Loevinger on ego development. This approach is only now being extended to a consideration of the adult population. We can assume that some adults have attained the levels postulated as "adult" or "mature" by these theorists. We must also acknowledge the fact that many adults never attain these stages or have regressed to earlier stages. Non-attainment and regression are assumed to be a direct result of environmental influences which do not encourage growth or which do not support attained stages. The adult may cope by

regressing to a stage which is supported by the environment. (Hunt and Sullivan, 1974)

Lifetime developmental theories vary widely in the samples of humanity they describe. Some focus on men only; others on the middle class only. We can discuss these theories in very broad, general terms. Some of the points they share in common are:

- An individual changes partly in relation to aging of the physical body, partly in relation to societal expectations, partly in relation to social and work roles assumed or attained, and partly in relation to the emotional or psychological responses made to other changes. These are all integrated by the individual to produce a total response.

- Under normal circumstances an individual is changing in at least one of these aspects at any given time, although he may not be changing in all aspects simultaneously. When the changes proceed in orderly fashion, with only one aspect changing at any time, the individual may be aware of growth and development but will probably not experience confusion or disorientation.

- If these aspects are all changing simultaneously, the individual is likely to experience considerable confusion, or what is referred to as a normative life crisis. These periods of crisis or transition tend to occur roughly every ten years. If the individual is confronted with environmental pressures from a situation he does not control or an event he did not initiate, he is more likely to experience "crisis" than if the changes are self-initiated.

- The first of these crises occurs just prior to the 20s, and others occur thereafter every 8 to 10 years. The crises which are experienced prior to the 20s, around the 40s, and just prior to retirement in the late 50s or early 60s are thought of as major transitions, while those which occur on entering the 30s and the 50s are thought of as minor transitions.

- The major transitions are characterized by changes in the self-concept, brought on by rapid increases in differentiation, followed by attempts to integrate these differences. The transition from adolescence to the 20s is marked by a shift from a dependent status to an independent and interdependent status. The transition from the late 30s to the early 40s is marked by a shift in time perspective from future to present, from a potential future self to a present real self. The transition at the time of retirement is connected to the cessation of productive work, as defined by society; by a shift in time perspective from present to past accomplishments; and from well-defined roles to ambiguous roles. (Chickering, 1969)

- In learning terms, these major transitions probably respond best to learning experiences which allow the individual the time to explore personal meanings and values and to transform these into meanings and values more in keeping with current reality.

- Minor transitions tend to focus on reassessment of the self in relation to personal goals and directions established in the previous major transition; to reconfirmation of the self-concept

and self-esteem; and to reassertion of the self as a valued member of society.

- In learning terms, these minor transitions probably respond best to self-discovery experiences without accompanying transformations.

- In between transition periods, each individual must reintegrate new meanings and values into the old constructs and into current life experiences, and consolidate what has been gained through new behaviours and new strategies.

- In learning terms, these periods of stability probably respond best to learning content related to current roles and statuses and to the knowledge, skills, and attitudes which enhance each. Consolidating current roles and statuses is thought of as a developmental task and has more to do with accumulating and acquiring new meanings, values, skills, and strategies than with transforming the old ones. (Erikson, 1976; Vaillant, 1977; Levinson, 1978; Gould, 1978; Dubin and Okun, 1973; Chickering, 1976 a and b, 1969)

Developmental theories which focus on situation-specific processes are found in the literature on professional education, on responses to social change and trauma, and on responses to death and dying, among others. All these theories postulate similar patterns of behaviour, occurring in four general stages. A synthesis of these stages includes the following ideas:

Entry Stage: This stage is triggered when a learner enters a situation which has a high degree of novelty, uncertainty, or lack of familiarity, which involves him in personal stress, or in which he perceives a threat to himself. He may perceive himself as disoriented within the situation, may defend himself by using inappropriate behaviour, may feel inhibited in his interpersonal relationships, may act as an observer without making a personal commitment to participate, may appear as if he were dependent or counter-dependent, and may communicate largely through monologue. The learner in the entry stage tends to rely on external standards to guide his behaviour and to make assumptions about his current situation based on past experience which may or may not be appropriate. In the entry stage teachers or others can best support the learner by creating a reliable environment which operates on the basis of standardized and explicit behavioural norms and in which the consequences of behaviour are known.

Reactive Stage: A learner moves out of the entry stage and into the reactive stage when he develops a sense of himself as being an individual who is capable of acting independently within the situation or when he perceives the environment as having become unreliable and unsupportive. The learner may perceive himself as autonomous and independent of the control of others, may work to develop a high degree of self-understanding, and may wish to carry out individual activities within a group setting. Learners in the reactive stage often express negative feelings, engage in conflicts and arguments with others, and express the feeling that the group is disorganized and confused. The learner in the reactive stage is

best supported by teachers or others who encourage expressions of individual feelings and opinions and who do not demand strict adherence to standardized behavioural norms.

Proactive Stage: When the learner feels confident about himself as an accepted and acceptable member of the group or actor within the situation, he moves on to discover and eventually accept the individuality of others involved. The learner in the proactive stage tends to perceive himself as involved in activities leading to mutuality, cooperation, and negotiation with others in the situation, as searching for an understanding of others in relation to self, and as developing shared norms and values for behaviour within the group. Learners generally use fewer individual activities and engage in fewer arguments. They are increasingly likely to use group activities and engage in dialogues. The proactive stage is often highly productive for the entire group. The learner in the proactive stage is best supported by teachers or others who accept and encourage cooperative and collaborative behaviour in preference to individual performance or competition and who can provide descriptive and immediate feedback about individual behaviour in relation to established objectives.

Integrative Stage: When the learner can distinguish between individual others, he moves on to integrating the perspective of others with his own. As a result of integrating activities, he develops a sense of balance between himself and others and between working at group or individual tasks and maintaining interpersonal relationships with others. The learner may integrate perspectives which involve multiple standards of behaviour, multiple interpretations of experience, and multiple sources of information. The learner in the integrative stage is best supported by teachers or others who encourage him to develop internal standards to guide personal behaviour, who openly share information about themselves and their feelings and values, who willingly act as co-learners and value the role of learner for themselves, and who can value and accept individual performance and group activities simultaneously.

In terms of adult learning, these theories suggest that all adults, when they enter a new learning experience, begin with dependent-type behaviours and move first to independent behaviour and then to interdependent behaviour during the course of the learning activities. The progression can be facilitated by a teacher who is prepared to provide some structure and direction at the beginning of the learning activities; to move then to encouraging individual activities; and finally to provide opportunities for interdependent activities within the group and for integrative processes for individuals. (Adams, 1974; Kübler-Ross, 1970; Tuckman, 1965; Hunt and Sullivan, 1974; Gibb, 1964; Schutz, 1967)

Learning principles

a) Adult behaviour is not fixed, but changes in response to both internal and external pressures.

b) The changes tend to follow basic patterns which are cyclical

and involve: becoming aware of the need for change; changing in ways which result in positive outcomes; and consolidating and integrating changes into self and one's life.

c) The adult learner is more apt to be responsive to learning opportunities during the intervals between transition points in his development.

d) Adult learners have not all reached the levels of cognitive development predicted. Such non-attainment may be the result of obstacles within the environment and/or lack of specific experiences.

e) Adults may also regress from previously attained levels of cognitive development because of environmental pressure to function at a lower level.

f) Adults are highly motivated to learn in areas relevant to their current developmental tasks and transitional phases.

g) Adults tend to enter new experiences in dependent modes of behaviour and to change in response to their own definition of themselves as functioning actors in their situation and in response to environmental expectations and reinforcements.

4 Characteristics of the Learning Situation

In the BPE formulation, the "E" represents Environment and is conceptualized as including everything relevant to the individual's learning which is external to himself. Included in this definition are such diverse concerns as learning resources, physical setting, social climate, institutional climate, accessibility, obstacles to learning or participation, teacher personality, teaching methods, and other learners, among others. A full report on each of these variables is beyond the scope of this report. We have selected, therefore, three variables for further discussion: teaching behaviours, design of the teaching process, and some of the characteristics of the teacher of adult learners.

A. TEACHING BEHAVIOURS

A synthesis of the literature on teaching adults suggests that there are three basic modes of teaching: directing,[1] facilitating, and collaborating. Each mode must be considered both as part of a continuum of teaching behaviours and as unique by itself. Each mode has advantages and disadvantages; each teacher utilizes each mode in unique ways and in response to different situations. Good teachers use all three modes in varying combinations depending on the material, the learners, and the setting of the learning activities.

---

[1] The term used most frequently in the literature on adult learning and teaching is "training." We felt that this term is used quite differently in the elementary-secondary system and might cause confusion or misunderstanding. We therefore selected "directing" as a term which conveys the intended meaning.

Directing

- helps the learner acquire specific skills and knowledge relevant and essential to specific tasks and performance (e.g., driving a car, speaking a foreign language, becoming a certified plumber).

- works best with material which, by social convention, professional supervision, or law, is prescribed for certain roles and/or certification.

- works best with material which can be segmented into manageable parts and then organized into sequences or hierarchies to form complex units of knowledge and skill.

- is the best method when the learner is constrained to learn specific material within a short period of time.

- requires that someone (an "expert," the director and/or the learner) set the objectives, define the material, divide the material into segments, organize it into sequences and hierarchies, and provide it in a ready-to-use form to the learner.

- requires that the director provide immediate feedback and periodic reinforcement. The type and focus of feedback can be negotiated between director and learner but is generally built into the program. Rewards or reinforcement can also be built into the programmed material, but most adults also require additional support and encouragement from the director or other learners.

- can be implemented in situations varying from a "directorless" learning module to a training program combined with other teaching modes (e.g., micro-teaching programs).

- requires that the director perform activities which include defining and structuring content; structuring the learning process; providing feedback and reinforcement; providing support, encouragement, and guidance as necessary. The responsibility for these functions rests most often with the director, but can be negotiated and shared with the learners. Any increase in negotiation and sharing tends to increase the amount of time required to complete the learning tasks.

- must involve the learner, either explicitly or implicitly, in two critical aspects of the process. These are:
a) that he must be committed to the objectives of the program and to the learning processes involved; and
b) that he must be willing to accept the feedback and reinforcement provided.

- is relatively non-threatening to the director provided he is an expert in both the content and the processes involved in the learning activities. Directing functions, however, may provide little opportunity for interpersonal involvement with the individual learners.

- allows the learner to acquire material in a relatively short period of time without having to discover it for himself. There may be few opportunities for teacher-learner or peer interactions. There is threat to the learner at two points:

a) if the objectives and processes do not meet the learner's real needs and he cannot exit from the program; and
b) if the feedback is somehow threatening to the learner's self-concept.

- is most relevant for mastery learning and achievement needs and for enhancing self-esteem.

Facilitating

- helps the learner discover personal meanings within knowledge, skills, and attitudes already learned; discover new meanings within experience; create new meanings, values, skills, and strategies from integrating new and old learnings (e.g., learning to "be a professional"; self-discovery; consciousness-raising; personal change during transition periods of development).

- works best with material which is simultaneous in nature, that is, with an experience or gestalt (simple or complex whole) rather than with parts. Allows the learner to develop his own perception about the parts and about the relationships between them.

- works best when the learner has few time constraints on the learning process.

- requires that someone (the facilitator, learner, or external resource) provide material through experience or through a descriptive resource such as films, books, art objects, pictures, artifacts, and so on.

- proceeds through dialogue involving statement-making, clarifying, probing, developing analogies, and reflecting, among other activities. The dialogue is complete only when the learner is satisfied with his own personal understanding of meanings. Reinforcement is a normal part of the dialogue between two persons, and feedback is provided through reflecting, summarizing, and paraphrasing rather than through judging or evaluating.

- can be implemented through activities which vary from group experiential processes, to demonstrations and use of media, to one-on-one counselling processes.

- requires that the facilitator provide behaviours which include being a catalyst, resource, reflective mirror, alter ego, and co-inquirer, and provide support, guidance, and encouragement. The responsibility for these functions can come from the facilitator and/or the learners. The structure, objectives, and direction of the learning activities are negotiated; the content, in the form of personal meanings, comes from the learner.

- is relatively non-threatening for the facilitator provided he doesn't interfere with the content (i.e., the learner's meanings) and becomes involved only through his own process skills.

- is relatively threatening for the learner since his personal meanings and self-concept are vulnerable. For this reason, facilitating activities require that time be spent in building a trusting relationship between the facilitator and the learner.

- is most relevant to belongingness and affiliation needs, to

mastery learning which requires a sense of personal commitment to a set of values (e.g., professional development), and to improvement of the self-concept.

Collaborating

- requires that learner and collaborator share, as co-learners, in the discovery and creation of shared meanings, values, skills, and strategies.

- works best with material in which all co-learners have a stake and through which they can grow individually and as members of a team (e.g., community problem-solving, professional development of an entire school staff).

- works best with material which is defined by the co-learners, and through processes, structures, and directions which are negotiated by the co-learners. The negotiation process should yield consensus within the group.

- is the best method for building "a community of learners," but requires considerable expenditure of time and energy.

- requires that co-learners divide tasks on some mutually acceptable basis and that all contribute to leadership functions in both tasks and interpersonal relationships. The co-learners are required to act interdependently.

- requires that the collaborator participate as a learner with the same responsibilities and rights as other learners and with full membership in the group.

- is relatively threatening and high-risk to both collaborator and learner because both are vulnerable within the process.

- requires a high level of trust.

- is most relevant to belongingness and affiliation. It could be used for almost any learning need, but this would require that co-learners be willing to temporarily shift to another mode to meet that specific need (e.g., as in a staff development project).

There is considerable debate among adult educators as to which mode of teaching is best suited to the needs of adult learners. It seems apparent that, in keeping with Lewin's formulation, each mode is functional for some adult learners, in some learning contexts, and for some content; and that no one mode will serve all purposes. Some matches between teaching modes and learner characteristics have been studied. For example, the directing mode is most productive when matched with learners who prefer dependent learning behaviours, or when used as the teaching mode at the point where learners enter a new program or begin to learn wholly new content. (Miller, 1964; Thomas, 1967; Rogers, 1969; CERLI, 1969; Knowles, 1970, 1973; Landvogt, 1970; Houle, 1972; Tough, 1971; Kidd, 1973; Bridges, 1973; Joyce and Weil, 1972; Freire, 1973; Cross, 1976; Pine and Boy, 1977; Smith and Haverkamp, 1977; Pratt, 1979; Bates, 1979; Gibb, 1964; McLaren, 1975; Hunt, 1971)

Learning principles

a) Adults learn most productively when the teaching mode matches their needs and/or preferred learning behaviours and styles.

b) Adult learning behaviours tend to change as a result of increasing familiarity with a learning program or content. Teaching modes need to change in responsive ways at the same time.

c) There is no "one best teaching style" for use with adult learners. Each style is appropriate for some learners, in some settings, and for some content.

B. DESIGN OF THE TEACHING PROCESS

The literature on adult education yields a wide variety of possible methods for designing the processes through which a learner can be assisted to learn. Most of the literature focusses on three basic types of processes or models of teaching: information-processing models; programmed learning or operant models; and humanistic or person-centred models. We should note that these are by no means inclusive of all possibilities; that each of these encompasses a wide range of possible designs; that each tends to overlap with the other two; that each can be used in combination with one or both of the other two; and that each can be adapted for group or individual learning.

The actual choice of a model depends on several prior assumptions about what is the best and most productive way for an adult to learn; about what is the most practical way to teach; and about what is valued in the teaching-learning transaction. Outlined below are some of the major aspects of each model. The reader is referred to Joyce and Weil (1972) and Dubin and Okun (1973) for a more extensive description of each model

Information-Processing Models

1) These models are based on (i) the intellectual capacities of the individual in developmental terms; (ii) mental processes for dealing with information and how these can be enhanced; and/or (iii) a framework of concepts and skills relevant to a specific discipline or area of study.

2) Models based on a learner's intellectual capacities (e.g., Piaget's model of cognitive development) tend to assume that adults are capable of using certain information-processing and thinking strategies because of their age. This assumption ignores the fact that some adults

have never acquired these strategies and others have but don't use them.

3) Models based on mental processes for dealing with both coded and uncoded information employ a series of structured activities based on logical and/or analogical thought. Teaching strategies follow what is assumed to be the thought processes used by the learner. Models are often highly structured in process terms, but can vary widely in content. The teacher needs command of both process and content, knowledge about individual differences in cognitive styles, and skills to facilitate each individual style. These models can be expanded into problem-solving processes in which the teacher facilitates the process but the content is provided by the learner as a result of analysing his own problem.

4) Models based on the framework of a specific area of study use, as guiding structures, the concepts and strategies to be learned. In adult education, for example, guiding structures might include program planning, problem-solving, or group development processes, since these are three of the basic conceptual structures and strategies of the field. If a problem-solving model is to be learned, the learner is first assisted in the actual process of solving one of his own problems. Then, through the process of reflection, he will develop an understanding of what he experienced. This understanding might include a conceptual framework, skills and strategies for further problem-solving, a set of values about the process, and some methods for helping another learner solve a problem.

Discipline-specific models are typical of most programs designed for teachers of adults. Here appears to be one of the basic differences between learning pedagogical techniques and learning andragogical techniques. Adults learning how to help children learn cannot experience most of the relevant activities as a child would; the adults experienced these activities so long ago that they have long since integrated them and are now functioning at a quite different intellectual and experiential level. Adults learning how to help other adults learn can experience the relevant activities in the same way as their adult students. Adult education tends to place a high value on learning by doing and then reflecting on that doing. In the vernacular of the field, this reflecting is referred to as "processing the experience."

5) Information-processing models are designed to assist the learner directly in acquiring or changing cognitive skills and concepts and indirectly in acquiring values related to cognitive learning, information,

sources and types of information, ways of dealing with information, ways of thinking, and so on. Some indirect learnings may not be intended by the teacher. For example, the learner may learn to value only information which comes from print sources and to discount information which comes from personal experience. The teacher needs to be aware of what values are modelled, implicitly or explicitly, by his teaching behaviour, as well as by the teaching model itself.

6) Because of our tendency in this society to turn everything into recordable information, information-processing models are a major focus for adult learning.

7) Information-processing models deal with the cognitive dimension of learning. They assist the learner in acquiring and extending his knowledge and in developing cognitive skills and strategies. When combined with a humanistic approach, they lead to valued knowing and an understanding of personal meanings and values and they enhance the learner's self-concept. When combined with a programmed learning approach, they lead to personal mastery or informed ways of doing and thinking and to changes in the performance aspect of the self-concept. (CERLI, 1969; Joyce and Weil, 1972; Dubin and Okun, 1973; Norman, 1973; DiVesta, 1974; Coleman, 1973; Yanoff, 1976; Miller, 1964)

Programmed Learning or Operant Models

1) These models are based on the idea that what the learner thinks and how he manipulates information are less important than how successful he is in achieving behavioural objectives, coping with his environment, or changing his behaviour. This idea proceeds from the assumption that human behaviour is lawful and is subject to external variables which lie outside the individual and can be arranged to induce changes in his behaviour. These models are basically concerned, therefore, with the learner's responses to certain conditions or stimuli and to how the learner can be reinforced to ensure repetition of these responses.

2) Teaching strategies are concerned with identifying behaviour which is to be changed; establishing behavioural objectives relevant to the changes sought; setting up learning activities through which the learner can use this behaviour; providing immediate feedback about this behaviour and the objectives established; and reinforcing the learner so that he will continue to use the desired behavioural response or to change in the desired direction.

3) Programmed learning models assist learners to acquire

standardized knowledge, skills, or strategies which are consistent with a set of expectations and objectives and which can be evaluated according to specific criteria.

4) Adults tend to learn more effectively with these models if they have a say in what behavioural responses are to be changed or acquired, in what objectives will be set, and in how feedback will be provided; if they are committed to a programmed process of learning; or if they need to learn specific material, skills, or strategies quickly. They also tend to learn more productively when they can organize and sequence the material to be learned in their own preferred way.

5) The learner must value both feedback and reinforcement, or neither will be effective. In many instances, the feedback itself is reinforcing and no further reinforcement is necessary. It is the act of receiving reinforcement which tends to reward the adult learner, not the actual value of the reinforcement itself. (Boshier, 1975)

6) Adult educators have a tendency to discount the value of programmed learning models because the learner indirectly learns to be other-directed rather than self-directed. However, the models do provide important insights into the intrinsic and reinforcing value of feedback directly related to behaviour specified by the learner as a desired objective of learning. This is referred to as formative feedback to distinguish it from summative feedback, assessment which the learner receives on completion of a learning program.

7) For effective use with adult learners, programmed learning models require that:

- the learner and teacher clarify and agree on specific behavioural outcomes for which specific feedback can be provided;
- the teacher have the knowledge and skills necessary to provide feedback in an objective manner; and
- the learner value this feedback and be able to use it to make further changes in his behaviour.

8) Programmed learning models lead to mastery and to the acquisition of skilled behaviour in the cognitive and psychomotor dimensions of learning. When combined with an information-processing approach, they lead to informed ways of doing and thinking. When combined with a humanistic approach, they lead to valued ways of doing and thinking. (Joyce and Weil, 1972; Dubin and Okun, 1973; Hoyer, 1974; Boshier, 1975; Cross, 1976; Hartley and Davies, 1977; Miller, 1964)

Humanistic or Person-Centred Models

1) These models focus on the idea that learning is a singular internal act, carried out by, and under the control of, an individual learner, who is unique in the past experiences, personal meanings, values, skills, and strategies he brings to the learning process; and that learning can be influenced, but not controlled, by external persons and conditions. The models further assume that humans have a natural potential for learning; that learning is facilitated when the learner participates responsibly in the learning process through choosing his own directions, discovering his own learning resources, formulating his own problems, deciding his own course of action, and living with the consequences of his choices; that learning which involves the whole person--feelings, values, strategies, concepts, and skills--is the most pervasive and lasting; and that the most useful learning is learning how to learn.

2) Teaching strategies therefore focus on what the learner needs and wants from his learning activities. The learner can be assisted indirectly through interpersonal relationships with the teacher and other learners which are based on trust, rather than directly through a set of structured activities or laid-on content. The teacher's primary responsibilities are:

- creating a climate in which learning is valued and disincentives or obstacles to learning are reduced to a minimum;
- helping the learner to clarify learning needs, purposes, and objectives;
- organizing and making available the widest possible range of resources;
- presenting himself as a flexible resource to be used by the learner; and
- behaving in simultaneous roles: co-learner who can and will learn from and with the learner; objective observer who can respond to the individual needs and feelings of the learner; and subjective participant who will act on and share his own feelings, needs, and personal values.

Person-centred models, therefore, demand that the teacher be highly skilled in process facilitation and content area and highly committed to personal involvement in the teacher-learner transaction.

3) The model design is emergent in that the teacher must wait to discover what the learner needs before learning activities and content can be planned. Learning processes and output are shaped as the learner selects and implements his own goals and activities. However, most

person-centred models also include provision for some structured activities at the beginning of the learning program which assist the learner and teacher to clarify learning objectives and directions. These objectives or directions may relate to any aspect of the learning process--content, strategies, processes, activities, experiences, and so on.

4) Person-centred models have two general overall objectives:

- to facilitate the learner's discovering, exploring, and creating personal meanings and values, skills, and strategies which he can use to facilitate his own further learning; and
- to facilitate the learner's developing the self-concept and the self esteem, which then contribute in positive ways to further learning.

5) Person-centred models are based on the value orientation that every learner not only is unique but also is worthy of respect and acceptance and of being treated with dignity. This orientation suggests that the teacher must be willing to acknowledge that the learner is as much a potential resource for learning as the teacher and that both share rights and responsibilities which are equal and reciprocal in nature. Since the teacher is expected to be able to respond to individual needs and learning style, the most essential element of teaching in these models is learning about the learners. That is, the teacher is as much a learner as the learners are, and the teacher's learning resources are invariably the learners themselves.

6) These models require that the teacher be able to respond to individuals, be able to develop supportive climates for both individuals and groups, and be able to facilitate learning processes for both individuals and groups.

7) Some of the literature on person-centred models suggests a problem for adult educators. Extensive writing, particularly by Rogers (1951, 1969), suggests that "the goal of [such] education is to assist students to become individuals:

- who are able to take self-initiated action [and] to be responsible for those actions;
- who are capable of intelligent choice and self-direction;
- who are critical learners, able to evaluate the contributions made by others;
- who have acquired knowledge relevant to the solution of problems;
- who ... are able to adapt flexibly and intelligently to new problem situations;
- who have internalized an adaptive mode of approach to problems, using all pertinent experience freely and creatively;

- who are able to cooperate effectively with others in these various activities;
- who work, not for the approval of others, but in terms of their own socialized purposes."[2]

Suggestions on how to implement such models for use with children begin with the assumption that children do not have all the values, skills, and knowledge and can be assisted to learn them through the person-centred models.

When the models are applied to adults, the suggestions on how to implement them tend to begin with the assumption that an adult, to be respected and treated with dignity, should not be thought of as a child, and therefore must be thought of as already possessing all these values, skills, and knowledge. Sometimes little consideration is given to how a teacher would implement a person-centred model in a group setting when the individuals in the group range from those with none of these characteristics to those with all of them. Shared learning activities for such a group would be very difficult to arrange.

8) Person-centred models are most relevant to the affective dimension of learning and lead to attitude change, to an understanding and awareness of personal meanings and values, and to changes in both the self-concept and the self-esteem. When combined with a programmed learning approach, they lead to valued ways of doing and thinking and to changes in the self-esteem. When combined with an information-processing approach, they lead to valued ways of knowing and to changes in the self-concept. (Rogers, 1951, 1969; Schutz, 1967; Gibb, 1964; Joyce and Weil, 1972; Dubin and Okun, 1973; Bridges, 1973; Coleman, 1976; Pine and Boy, 1977; Bates, 1979; Taylor, 1979)

Learning principles relevant to learning skills (psychomotor or behavioural dimension)

a) The adult learner must be aware of the inadequacy or limitations of his present behaviour and of alternative possibilities for new behaviour. The teacher may need to assist the learner in completing an assessment of his current skills and learning needs.

b) The adult learner must have a clear idea of the behaviour he is attempting to learn. The teacher will need to assist the learner in stating and clarifying specific behavioural objectives.

---

[2]Carl R. Rogers, *Client centered therapy* (Boston: Houghton Mifflin, 1951), pp. 387-388.

c) The adult learner must have opportunities to practise the appropriate behaviour. The teacher can assist the learner in developing activities to be carried out in non-threatening environments.

d) The adult learner needs feedback which lets him know how closely he has conformed to the established objectives. The teacher should be able to give feedback in a non-threatening manner. Feedback should be task-oriented and specific.

e) The adult learner needs reinforcement of some type to encourage him in further learning. Reinforcement can take the form of valued feedback about success--feedback from a valued external source or feedback from the learner's own feelings of accomplishment.

f) The adult learner must have available further appropriate material or activities through which to continue learning. These are planned through continuous reassessment of needs, objectives, and behavioural changes.

Learning principles relevant to learning knowledge (cognitive dimension)

g) The adult learner must have access to coded or uncoded information in a variety of sensory modes (visual and auditory, abstract and concrete) and in sufficient quantities to provide repetitions and variations on themes. The teacher or the educational institution is responsible for the necessary organizing activities.

h) The adult learner needs to be open to the possibility of alternative meanings for information. He can be encouraged if the teacher does not require certainty about meaning but is prepared to deal with ambiguity and contradictions.

i) The adult learner needs to be able to deal with specific and concrete information as well as general and abstract information, and must be able to perceive the connections of each to the other. This ability is developed when the teacher encourages learners to clarify and summarize their own thinking.

j) The adult learner needs to be able to shift his attention from figure to ground, to shift the organizing principles which determine figure and ground, and to recognize the relationships between them. The teacher can assist the learner by focussing or refocussing his attention on alternative aspects of the gestalt.

k) The adult learner needs to be able to move from simple conceptual organizations to more complex ones and back again. The person who is aware of the overall organizing principles of any gestalt is probably a more effective learner. These organizing principles come from the learner's own knowledge and experience and may need clarifying.

l) The adult learner needs opportunities to reflect and observe passively as well as to test and experiment actively. Flexibility of mode is developed through a variety of learning activities which provide for both types of processes.

m) The adult learner needs to be able to verbalize his knowledge

or produce some material representation of it if he is to share this knowledge with others for the purpose of helping them or receiving feedback.

n) The adult learner must be able to store and retrieve knowledge from memory or from some other organized system. The teacher can help him develop organizing principles to handle sorting and retrieving activities.

o) The adult learner needs reasonably good sensory capacities. His capacities can be used optimally if information is provided in a variety of formats.

p) The adult learner needs a variety of convergent and divergent cognitive strategies. These can be developed through a variety of learning activities which call for diverging and coverging in alternating sequences.

q) The adult learner needs to be aware of his own value system through which he makes decisions based on information and through which he evaluates both input and learning outcomes.

r) The adult learner must receive feedback which lets him know how others understand the knowledge he communicates. This feedback is related to his informative messages and his apparent cognitive strategies.

Learning principles relevant to personal meanings and values (affective or feeling dimension)

s) The adult learner must be respec... and must respect himself for what he is now and for his past experiences and how he has interpreted them. His current values and feelings cannot be discounted.

t) The adult learner must have some awareness of himself and be able to focus on his own meanings and values through self-reflection. These capacities are encouraged in an environment based on trust relationships among participants and teacher and on activities which allow self-reflection without evaluation.

u) The adult learner needs to be able to comprehend the various relationships between experience, persons, things, processes, concepts, and strategies. He needs to be able to perceive both causal or sequential relationships and simultaneous or spatial ones. These abilities can be fostered by a teacher who is capable of focussing on relationships and of directing the learner's attention to interactions as well as to actions and reactions.

v) The adult learner must receive feedback which lets him know how others understand and value his feelings, meanings, and values. This feedback must be specific and related to the others' feelings and values.

C. CHARACTERISTICS OF TEACHERS OF ADULTS

The first and most basic characteristic of teachers of adult learners is that they are adults themselves. Every characteristic described as

being important for an adult learner is also applicable to and important for the adult teacher--not excluding the characteristic of being a learner. In the teaching-learning interaction, the teacher must be willing and able to learn about the learners so that he can respond in individual ways to each person. If he is unwilling to learn about them and responds to them in stereotyped ways, his attitude will be conveyed to them through his non-verbal behaviour. The teacher of adults also needs to be prepared to learn from the experience of individual learners and to present himself as a learner.

Beyond these two characteristics--being an adult and being a learner--the literature on adult education provides three further sets of basic characteristics. These relate to the teacher's (1) self-concept and self-esteem, (2) interpersonal relationships with the learners, and (3) knowledge and skills in both subject and teaching areas. These characteristics are outlined below. The reader should be aware that our description is of an ideal adult teacher, a standard very few attain in all teaching-learning transactions with all learners. The literature does indicate that these skills, values, strategies, and knowledge are learnable and should not be considered as personality characteristics or inherent tendencies.

1) The adult teacher's self-concept and self-esteem need to be positive in nature. He should be able to trust himself to cope with all types of situations, including failure, uncertainty, and threat, without becoming unnecessarily anxious or resorting to self-defensive behaviour. He needs to perceive himself as a learner and to value this role for himself. He needs to be able to learn from adult learners. He needs to be aware of his potential as a role model for others. He needs to be willing and able to disclose his feelings and values to the learners he is assisting. He should act congruently in that his verbal and non-verbal behaviour all convey authentic, compatible (or at least not incongruent) messages. He needs to be aware of himself as a participant in any given situation and to be able to respond with some degree of immediacy to events as they occur. He needs to be aware of his own values, needs, attitudes, and purposes, to act in ways which are congruent with them, and to share these with the learners.

If the adult teacher's self-concept or self-esteem is negative or temporarily depressed, he may respond inflexibly or defensively to the learners and thereby increase their stress and anxiety. If he makes an error in the process of teaching, his self-esteem may drop and he may

use behaviour designed to defend himself against shame, failure, or guilt. Such behaviour would create further stress for both teacher and learners. If he does not value the learner role or views himself as a "finished learner" and therefore an expert, the learners may acquire knowledge but may not gain in self-concept or self-esteem in the process. (Satir, 1972; Bandler and Grinder, 1976; Carkhuff, 1976; Smith, 1977; Mezirow, 1978)

2) In his relationships with adult learners, the adult teacher must value and respect individual learners and their representational models of experience. He needs to be willing to treat the learner with unconditional, positive regard and to refrain from judging or evaluating the learner and his behaviour. Both positive and negative judgments have a tendency to promote closure. He needs to be aware of his own interpersonal style and skills and of how these affect learners. He should be aware of how he is valuing and behaving toward each learner. He needs to value himself as a potential resource and as having something worthwhile to offer to learners. He needs to value the learners as a potential resource for his own learning. He needs to be willing and able to be empathetic, caring, and understanding toward learners. He needs to be committed to the learning of others and to step aside to allow individual learners to discover, acquire, create, and test out personal meanings, values, skills, and strategies without imposing or demanding that his own be learned. He should be prepared to be accountable for his own behaviour as a teacher and as a person. He should be responsive to individual learners, to their needs and feelings, and to their learning styles and directions. He needs to be willing and able to negotiate with learners in developing learning objectives and activities. He needs to be willing and able to provide specific feedback to learners and to confront them about undesirable behaviour if necessary. He should value and be open to feedback from learners about his own behaviour.

If the adult teacher is unwilling or unable to be aware of himself and his behaviour in relationships with others, he may never be able to change or improve his teaching behaviour. If he is unwilling or unable to be accountable, responsive, committed, and open with learners, they will be shortchanged and he may find himself feeling anxious and defensive. Positive behaviours are essential for interdependence. If the learners are not yet capable of behaving interdependently, they will acquire these behaviours most effectively if they can learn by observing an appropriate

model. If the teacher does not value and respect the learner, he may find the learners becoming passive participants. (Carkhuff, 1967; Aspy, 1972; Rogers, 1969; Satir, 1972; Abbey, 1973)

3) The teacher of adults must have knowledge, values, skills, and strategies relevant both to the subject area or content being learned and to the teaching functions required to help adults learn.

In the subject area, the teacher needs to be knowledgeable and skilled enough to serve as a flexible resource for the learners. He needs to understand the structural framework, values, strategies, and organizing principles used in the discipline being studied.

In the teaching area, the teacher needs to be able to use a wide range of directing, facilitating, and collaborating processes; to understand the characteristics and nature of adult learners and adult learning; and to respond to individual styles and needs. He needs to be able to guide both individual and group learning activities and to utilize several different models of teaching. He should be aware of his own learning and teaching styles and of how these might directly or indirectly affect learners.

Most adult teachers have extensive backgrounds in the subject area but very meagre knowledge and skills in the teaching functions specifically relevant to adults. For most teachers, these two different sets of knowledge and skills are acquired through different educational institutions or academic departments. Often the teachers learn the teaching component through on-the-job experience and personal learning activities. Some also receive in-service training through professional development programs.

Teachers at the secondary school level tend to acquire the knowledge and skills of subject area and of teaching functions from different institutions or academic departments before they begin to teach. Further learning in both areas comes through personal efforts and professional development activities.

Teachers at the elementary school level tend to acquire the knowledge and skills of both subject area and teaching functions simultaneously from the same institution. Their approach to both subject area and teaching functions tends to be structured by similar concepts, values, and organizing principles. (Joyce and Weil, 1973; Bates, 1979; Abbey, 1973; Smith, 1977)

Learning principles

a) Adult learning is facilitated by a teacher whose self-concept and self-esteem are positive and who is able to remain flexible and responsive in situations which might involve anxiety and stress.

b) The interpersonal interaction between the adult learner and the adult teacher is facilitated by a teacher who is aware of how he behaves in such relationships; who is accountable, committed, open, and responsive to the learner; and who values and respects both himself and the learner.

c) Adult learning requires a teacher who has knowledge and expertise in both the subject area being learned and the teaching functions.

5 Learning Principles Applied to Program Planning

Program planning, like learning and teaching, is an extremely complex activity. A written description cannot do justice to its component parts or explain the dynamic interactions among those parts. We have limited our discussion to statements about underlying assumptions and general principles, to an application of adult learning principles to program planning in general terms, and to the specific application of both sets of principles to ongoing professional development and retraining of teachers.

A. UNDERLYING ASSUMPTIONS

I. Program planning is an activity. All activity contributes in some measure to learning. The person who does the planning therefore learns something through the activity itself. When program planning is combined with specific learning content, in some way the learning process is greatly facilitated. In many instances, the person who plans the learning program learns the most. We learn what we plan. The more an adult learner can be involved in the planning related to his own learning activities, the more productive those activities will be and the more likely the desired outcomes will be reached. (Norman, 1973; Hebb, 1973)

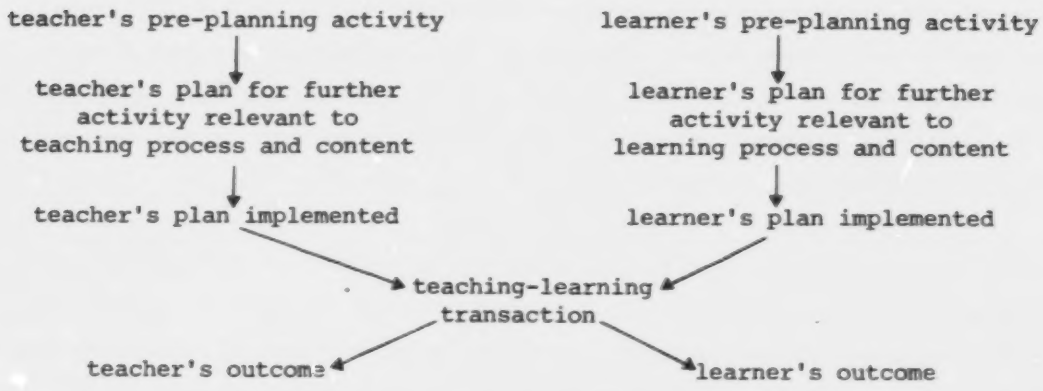
We defined learning as the change in behaviour as a result of experience and as the behaviours used during the process of change. Planning is a future-focussed activity, the purpose of which is to promote change or create new experiences. Planning, therefore, is essential to learning and is accompanied by one's hopes and expectations about change. We defined change as a three-step process involving being aware of need to change, moving in positive directions, and integrating the changed

component back into the scheme of things; we can then assume that planning is part of each of these steps. Planning during the awareness step includes clarifying and specifying the desired change. Planning during the moving step includes determining what the desired end conditions will be, what activities will best effect movement in this direction, and how these activities may be implemented. Planning during the integrating step includes assessing one's change relative to the desired direction or outcome and judging whether the change has had the desired effect.

II. Planning is an activity/process which results in the production of a plan/outcome/product requiring further activity through an implementing phase. In some cases, planning activities produce plans to implement further planning. The plan is structured to some extent and, as such, provides stability. The planning of an activity is evolutionary and, as such, is characterized by instability. Teachers and learners who have a low tolerance for instability and uncertainty are likely to develop plans which, once stabilized, become inflexible and unchangeable; if the plans do not work out, those involved may become threatened with failure, for they are relying on the plan to provide stability in the experience of change. Teachers and learners who have a high tolerance for instability and uncertainty are likely to develop plans which are characterized as emergent, highly flexible, responsive to feedback, and changeable at any time; they rely on the positive aspects of their self-concept and self-esteem to provide stability in the experience of change, rather than on plans.

III. All participants in any learning program bring to that experience some pre-planning which provides them with expectations and hopes (i.e., motives). If we examine the preparatory activities of teacher and learner, we find that the teacher's pre-planning results in plans for further activities relevant to teaching processes and content. These are implemented in the hope of facilitating the learning process of others and in the expectation of the learners' acquiring specific content. The individual learner's pre-planning results in plans for further activities relevant to learning processes and content. These are implemented in the hope of being able to learn in his preferred style and in the expectation of solving a personal problem, effecting change in his personal life, or reaching a desired personal goal. These two

sets of plans interact and affect each other at the point where they are implemented in the teaching-learning transaction:


teacher's pre-planning activity
learner's pre-planning activity
teacher's plan for further activity relevant to teaching process and content
learner's plan for further activity relevant to learning process and content
teacher's plan implemented
learner's plan implemented
teaching-learning transaction
teacher's outcome
learner's outcome

This analysis raises several important concerns, such as:

1) That pre-planning on the part of teacher and learner proceeds separately is, in some ways, unavoidable. The more these activities proceed separately and the more inflexible the respective plans become before the learning program has started, the less likely an effective learning experience will result. In such conditions, the likelihood of an overall match between the two sets of plans is relatively small, the threat of conflict between plans is relatively high, and the opportunities for flexibility and change in either set are reduced. When more learners are added, each with a unique set of plans, the more complex and mismatched the experience becomes.

If the teacher can develop a climate for learning in which threat is reduced and in which pre-established plans can be shared and integrated into a collaborative plan, the potential for productive learning and a satisfying experience will increase. The teacher's pre-planning, therefore, should include plans to establish a climate conducive to threat-free learning and to develop procedures for further collaborative planning by teacher and learners.

2) There is some difficulty involved in deciding who plans what for whom. The teacher can certainly plan teaching strategies, can collect resources, and can make some decisions based on expert knowledge about defining content and processes. The teacher clearly cannot plan how the learner will actually learn since this is controlled by the learner. Nor can the teacher plan how the learner will integrate content or other outcome in terms of personal knowledge, values, and skills. The learner

can plan his own learning and study processes, can plan to be responsive to the teaching activities and the content, can make himself more aware of how he learns, and can clarify his own needs and objectives. But he cannot predetermine how the teacher will teach; nor should he be required, except in unusual circumstances, to collect the basic resources prior to the learning program. At some point the teacher and learner must plan a set of shared or individual activities which complement and facilitate each other, and they must develop a set of shared meanings, values, and skills, or at least an understanding of how individual sets are both different and similar.

3) A problem arises when the teaching-learning transaction reaches the point of assessing progress, evaluating processes, and judging outcomes. The interaction among teaching, learning, and planning yields several types of outcomes, each of which may need to be assessed by different techniques or standards. These outcomes include: the resulting behaviour; the type or amount of change in behaviour accomplished; the relationship between entry behaviour and resulting behaviour; the relationship between the change accomplished and the change intended; the relative contributions made by teaching, learning, and planning activities; and the degree of satisfaction. Each of these outcomes can be assessed from the perspective of the teacher's activities, from that of the learner's activities, or from an integrated perspective.

We would never dream of assessing the learner in terms of the teacher's progress or outcomes. Yet we persist in assessing the teacher in terms of the learner's progress and outcomes. It would seem more logical to develop three sets of criteria--one set to assess each learner, one set to assess the teacher, and a third set to assess the overall shared aspects of the program. We also need to develop separate sets of criteria to assess progress and outcomes.

The problem of planning what and how to assess must be resolved at the planning step in which objectives are established and directions chosen. Objectives must be conceived differently according to whether they relate to progress, to outcomes, to teacher, or to learners. When the interaction is assessed, the teacher and learners must share the responsibility for both success and failure, satisfaction and dissatisfaction. (Davie, 1979; Mager, 1962; Pipe, 1975; Weiss, 1972; Steele, 1973)

IV. Planning activity can focus on content to be learned or processes to be used. Plans based on content appear to be easier to develop, since content is already structured to some extent within the memory of the planner or in the resources to be used. Plans based on content provide difficulty for the learner, since structuring content is always a highly individualized matter and the ways in which one person organizes material may not suit the style of another.

Plans based on processes may appear to be more difficult to develop, since every learner and teacher has an individualistic style for learning. In fact, the number of ways to accommodate these individual styles is relatively more limited than expected. Activities can be designed over the entire learning program which provide for most individual differences. The most essential element in planning for process is the teacher's ability to be responsive to and supportive of individual styles in a group setting.

V. Every discussion about planning implicitly involves a set of values about learners and learning, teachers and teaching, the content to be learned, and the nature of the relationships involved. For every generalized statement, one can come up with a specific "yes,but--" which implies that the general statement is in error and cannot be used in planning. Eventually, those involved must be willing and able to make planning decisions based on the best information available; to implement those decisions through actions; to accept responsibility for the consequences of those actions (accountability); and to be responsive to the feedback about those actions (flexibility). Some adults, both teachers and learners, become immobilized at the decision-making step, and some at the implementing step; but most become immobilized at the accountability and flexibility step. Accountability and flexibility are easier when the planning is a collaborative process and all involved share in the consequences.

The process of schooling has a tendency to foster indirectly the learning of values which could be described as "succeed or die." Both teachers and learners need to learn values which can be described as "fail and grown and succeed at growing."

VI. Teachers and learners bring to the planning process the same characteristics they bring to teaching and learning experiences. All

the characteristics described for adult learners can be applied in similar ways to the various issues of planning.

VII. Program planning can be done by expert planners who have no direct contact with learners, by teachers, or by learners. These various individuals can work separately or collaboratively. Ultimately, it is the teacher who is expected to initiate the planned activities and the learner who hopes to do the learning. It seems reasonable to assume, therefore, that these two should carry out the major aspects of planning a learning program. Planning by experts or by teachers with no learner involvement tends to lead to subject-centred programs and theoretical problems. Planning carried out largely by learners with teacher assistance tends to lead to problem-centred programs and immediate application of solutions to real problems. (Farmer, 1972; Kidd, 1973; Tough, 1978)

VIII. Program planning is invariably a pragmatic enterprise based on compromise. There are always conflicts between what is valued and what specific limitations there are on the time, energy, money, resources, and skills of the persons and institutions involved. Attention must be paid to the consequence of any trade-off. There are often equally workable alternatives which could allow the planned change without adding undesired consequences. Some apparent limitations, on closer examination, are limitations which could be removed or reduced.

Learners and teachers tend to function within institutions and systems, all of which plan in some way for other components of the system. In a vertically organized system, the planning decisions made at upper levels place constraints on those at lower levels. We tend to view the former as leading to dependent activities. Every plan, however, is both limited by constraints from others and limiting toward others. Horizontally organized systems also experience constraints in planning. Such systems, however, tend to use interdependent activities to solve planning problems. Most adult educators value interdependent planning, but the reality is that most adult education activities are carried out in vertical systems in which planning tends to become a dependent activity.

B. GENERAL PRINCIPLES OF PROGRAM PLANNING

A review of the literature on program planning indicates that there are numerous models which are appropriate for adult learning programs. A synthesis of these models suggests that there are five basic steps which can be varied according to the planner's values and five basic issues relevant to adult learning which require planning activities. Each of these is affected by the context in which the planning is being done (e.g., communities, organizations, professions, individuals); the specific learners involved and their characteristics; the nature of the change or learning expected; and the persons involved in the planning. (Knowles, 1970; Houle, 1972; Tyler, 1957; Steele, 1973; Weiss, 1972)

Basic Planning Steps

Basic planning steps are: assessing needs and problems; establishing objectives; designing activities to promote change or learning; implementing designed activities; and assessing programs or outcomes. A brief summary of each follows.

1) *Assessing needs and problems:* A needs assessment can focus on the problems of the learner, expectations of certifying bodies, various aspects of the program content, concerns of the community, or needs of the program facilitator. In many programs this step is not carried out with enough care. When needs are determined through "mind-reading" and when issues are not clarified and problems are not clearly defined, the assessment step can result in astonishing inaccuracies, misinterpretations, and assumptions which lead to ineffective programs and general dissatisfaction.[1]

Sometimes needs are assessed through a survey. However, if the data collection process is protracted, people may have moved on to new needs before a program responsive to the old needs is organized.

Another concern is that adult learners are often asked to state their needs at the start of a program and then no response is made to their statements. Teachers must be able to integrate need statements into responsive designs and to find common denominators among groups

---

[1] One of the writers once taught a course in adult psychology to a group of elderly adults. The previous teacher had been told they wanted a course in child psychology and she taught exactly that - psychology from birth to 18 years. The learners, however, were referring to their own children, who were in reality adults between 30 and 50 years.

of learners. It would be better not to ask for need statements if a teacher has no intention of responding to them.

2) *Establishing objectives:* This step can focus on the objectives of learners, teachers, professional bodies, and so on. Each objective should include a clear behavioural description which leads directly to assessment activities and suggests learning activities. Objectives relevant to processes to be used should specify the observable behaviour. Those relevant to outcomes should specify the characteristics of those outcomes. Those specifying change in some desired direction should specify comparison terms.

The teacher should have objectives for teaching, and the learner objectives for learning. The teacher should state his objectives, values, and expectations very clearly and explicitly at the start of the program.

Both teacher and learner need a sense of commitment to the established objectives, preferably through joint planning but at least through discussion. Objectives not supported by teachers will not be taught; those not supported by learners will not be learned. Established objectives need to be supported by the authority figures in any hierarchy and valued both explicitly and implicitly.

This step is not well utilized by most adult teachers. The most difficult aspect is to develop clear objectives which lead to later assessment.

3) *Designing activities to effect change or learning:* The activities which are designed to effect change should be congruent with the objectives and should facilitate movement in the planned direction of change. Program designs which are not congruent with objectives may lead to change and satisfaction but not yield results which were intended or desired. The design step is a creative one, often yielding a variety of alternative designs. Several conditions are essential for successful designing:

- Planning should include collecting and making available whatever resources will be required during the activities.
- Activities should have the potential for effecting change in the desired directions.
- Activities should accommodate a variety of learning styles.
- Activities should include opportunities for ongoing feedback and assessment of progress toward objectives.
- Activities should provide experiences in the processes of differentiating, transforming, and integrating.
- Activities should result from integrating the needs of

various individuals and synthesizing designs based on common denominators.

- Activities should include opportunities to practise new behaviour.

- Activities should include time for climate-setting, further planning, and dealing with individual and group needs.

4) *Implementing designed activities:* No further comment seems necessary except to say that the success of this step is dependent on the planning which precedes it and the skills and commitment of the teacher and learners.

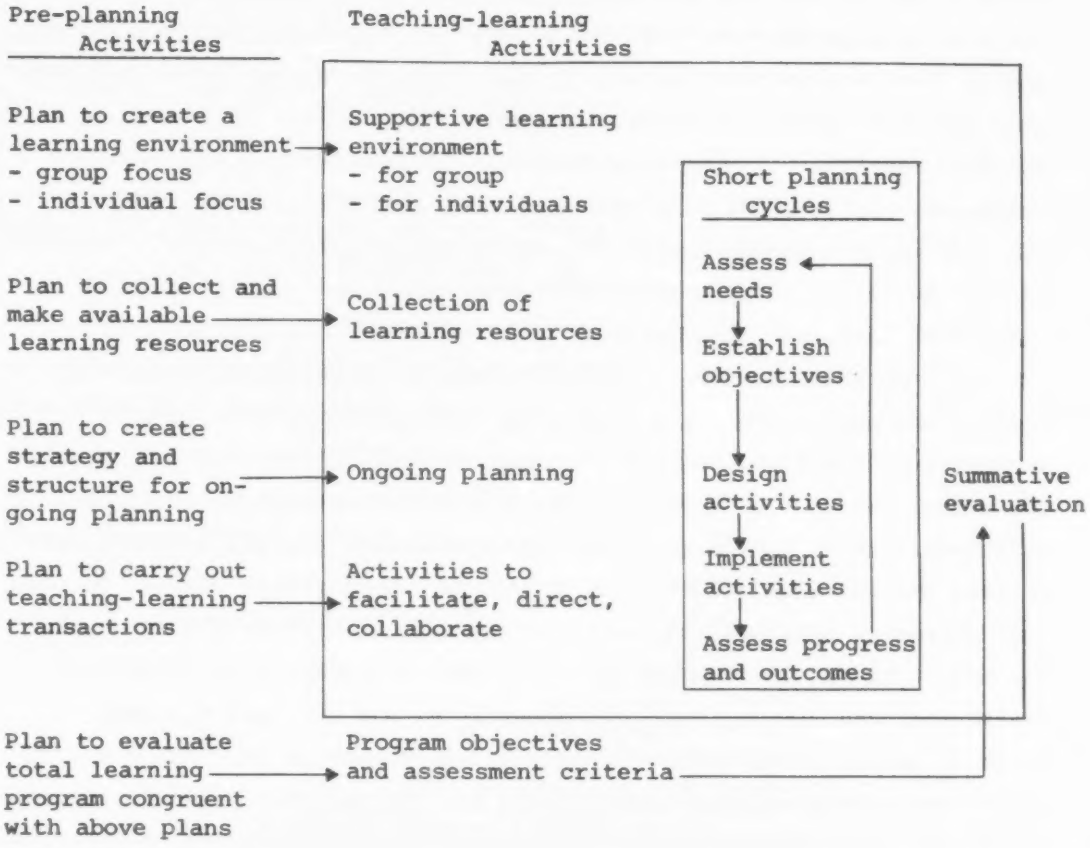
5) *Assessing progress and outcomes:* When assessing is done as an ongoing aspect of learning activities, it is referred to as formative evaluation; when done on completion of a program, it is referred to as summative evaluation. In both cases, it provides information about one's success in reaching a desired objective or moving in a desired direction. This feedback leads, in turn, to feelings of success, to assessing needs for further learning, and to a sense of satisfaction. As such, the progress can be reinforcing and motivating. Any assessment should be based on objective comparisons with standardized expectations or to subjective descriptions based on individualized expectations. Judgments which condemn learners rather than describe behaviour must be avoided.

Planning can proceed without all of these five steps or can utilize the steps in varying sequences, can elaborate on some steps, and can vary the time spent on each. The most effective planning appears to be that which involves both teacher and learners, short planning cycles using all five steps, and ongoing feedback or assessment of progress so as to modify further activities and define new needs and problems.

Basic Issues Requiring Planning

These include: developing and maintaining an environment conducive to learning; identifying, collecting, and making available resources for learning; developing a strategy for ongoing planning; carrying out the teaching-learning transactions; and evaluating the total learning program. To some extent, these issues all require planning before the start of the actual learning program. The plans developed can vary from fixed and relatively unchangeable to emergent and responsive to immediate conditions. The overall model can be illustrated as in the diagram. (Tyler, 1952;

Knowles, 1970; Houle, 1971; Gibb, 1964; Miller, 1964; Schon, 1971; Smith, 1978; Farmer, 1972; Davie, 1979; Bates, 1979; Taylor, 1979)


Pre-planning Activities
Teaching-learning Activities
Plan to create a learning environment
- group focus
- individual focus
Supportive learning environment
- for group
- for individuals
Short planning cycles
Assess needs
Establish objectives
Design activities
Implement activities
Assess progress and outcomes
Plan to collect and make available learning resources
Collection of learning resources
Plan to create strategy and structure for on-going planning
Ongoing planning
Summative evaluation
Plan to carry out teaching-learning transactions
Activities to facilitate, direct, collaborate
Plan to evaluate total learning program congruent with above plans
Program objectives and assessment criteria

- Adapted from Ingalls (1973)

1) *Developing and maintaining a learning environment:* This aspect of planning includes the physical environment, the social-emotional environment (i.e., interpersonal relationships), and the reduction of obstacles to learning.

The physical environment includes: room arrangements, furniture and other fixtures, audiovisual equipment and the necessary conditions for using it; scheduling; arrangements for food and beverages if necessary; availability of supplies; washroom facilities; and so on. While these seem obvious, not planning in this area can lead to unfortunate experiences.

The social-emotional environment includes both group settings and one-to-one relationships. The teacher needs to pay some attention to

developing a learning climate which is free from threat and in which interpersonal relationships are based on mutual trust, openness, responsiveness, and accountability from both teacher and learners. These conditions must be nurtured and developed at the start of a learning program and then maintained throughout the entire program. They require a certain amount of time commitment as well as personal willingness to get involved at a personal level with others. The most difficult aspect is dealing with conflict. The teacher must have knowledge of group and interpersonal processes, skills in helping others relate, and skills in relating directly to individuals.

The reduction of obstacles to learning might include: helping individual learners solve personal problems related to financial difficulties, emotional stress, work-family-learning conflicts for time and energy, and so on; assisting individual learners to utilize various support services such as libraries and audiovisual services; interceding for individuals in conflicts with administrative structures; assisting individuals to acquire better learning-how-to-learn, study, or writing skills. One obstacle which is not readily apparent to the teacher is that most learners begin programs with some anxiety about the teacher's goals and expectations. The teacher can reduce these anxieties by discussing, clarifying, and making clear statements about his own values about teaching and learning, the strategies and processes he intends to use, the objectives he holds for himself and for the learners, and the criteria he and the institution apply in awarding credit for successful completion of the program.

2) *Resource collection:* This aspect of planning includes collecting, developing, identifying, and making available both print and non-print, human and non-human resources. Print resources include bibliographies, library texts, copies of relevant articles, and so on. Non-print resources include films, tapes, games, photographs, and so on. Human resources include identified experts in certain subject or process areas, and include the teacher himself. In the early sessions of any learning program, the learners need to identify among themselves those of their peers who can also be used as learning resources.

3) *Ongoing planning strategy:* Strategy varies according to who is going to be doing the planning. If the teacher plans to do most of the planning, he must think in terms of how he will do this from week to week. If he plans to assign some planning to learners, he needs to know how

and at what point he will do this. If he decides to use a collaborative planning model, he needs to use the first few learning sessions setting up a means for it to function.

One aspect of ongoing planning focusses on how the teacher will deal with individual learning needs. If he asks for statements of learning needs and objectives at the beginning of the program, he must have some plan for integrating these into a design which will then provide for both common denominators and individual differences. If he chooses to use a joint planning model, he must be prepared to guide the necessary planning. To invite statements of needs and objectives and then not respond is to invite hostility and dissatisfaction.

4) *Carrying out the teaching-learning transactions:* This aspect of planning draws on the teacher's skills in directing, facilitating, and collaborating; his knowledge and values relevant to adult learners and adult learning; his strategies and models for teaching; and so on. These are all preparatory issues in that a teacher should have these components ready for use before the learning program begins. Every teacher should have some awareness of his own preferences and limitations in teaching style. A teacher without group process skills should probably avoid managing group interaction and should not plan for it.

Once the learning program is operating, the teacher needs to be able to make use of projective models of teaching-learning situations. Projective models are described by Schon as conceptual descriptions which relate the characteristics of the learners, and the learning activities, the learning situation, and the learning outcomes at some level of generality based on immediate conditions and emerging information:

> They are "projective" in the sense of being projected on that situation and always subject to transformation through contact with that situation....
>
> The learning agent [teacher] must be able to maintain his projective model as a basis for action while at the same time regarding it as a point of view on the situation.... This paradoxical combination of tentativeness and resolution is the characteristic mode of the projective model; and the ability to sustain it is the characteristic property of the agent....
>
> The learning agent ... must be able to confront multiple conflicting perspectives on the situation with one another....
>
> The learning agent must be willing and able to use himself as an informational instrument within the learning situation....[2]

---

[2]Donald A. Schon, *Beyond the stable state* (New York: W. W. Norton, 1971), pp. 229-236.

In order to facilitate interpersonal relationships, individual learning, and group processes, all the while keeping within the framework of the learning objectives, the adult teacher needs to be able to handle many different aspects of activity simultaneously. In some cases, conflicts arise between various aspects and often provide paradoxical problems for both teacher and learner. One analogy would be a teacher who is able to hand out a survey with one hand, write on a flip chart with the other, and listen intently to one learner's concerns, while pointing with one foot at a book needed by a planning group to complete a task.

5) *Evaluating the total program:* Evaluation provides some continuity among the various elements of the teaching-learning activity. The final evaluation should be based on program objectives relevant to each other component and on objectives for the teaching activities. These objectives must be clarified and specified before the program begins. If the program is to include an emergent design, then the objectives must reflect this. The teacher needs to present the objectives at the start of the program and conduct a periodic assessment of progress in relation to them.

We have not covered all aspects of program planning. The reader is referred to the following texts for further information: Knowles, 1970; Houle, 1971; Miller, 1964; Weiss, 1972; Steele, 1973; Smith, 1978; Ingalls, 1973; Leagans et al., 1971.

6 Application of Learning Principles to the Retraining and Professional Development of Teachers

This section provides an outline of some concerns suggested by adult learning principles and related to the retraining and professional development of teachers of children. We have focussed first on general concerns about the nature of teachers as learners and about the nature of learning-to-teach as learning content.

A. GENERAL CONCERNS

Teachers of children as learners appear to have some unique characteristics in addition to those described for adult learners generally. The essential nature of classroom teaching is aloneness, with the potential for loneliness and isolation. The teacher's practical experiences with learners are rarely shared directly with other adults. If the teacher is to learn from his experience, he must have enough self-confidence and sense of personal worth to be able to share incidents which tend to be labelled "not worthy" experiences. Sharing can be encouraged best in person-centred learning activities and group settings where there are high levels of trust and openness and low levels of perceived threat.

The initial step consists in helping teacher-learners to stop discounting their own experience, to share it, and to discover that they are neither crazy nor wrong nor inadequate (all of which feelings are potential outcomes of isolation).

A second essential aspect of teaching is the need for teachers to be able to function interdependently with other staff members in working on behalf of the total school. The shift from isolated independence in the classroom to group interdependence in the staff room is often difficult to make. Teachers-learners need opportunities to work alternately in both modes within any learning program.

The third essential aspect of teaching children is the contradiction between basic child and adult learning goals and processes. For children, learning focusses largely on socializing and conforming to group norms and on *forming* meanings, values, skills, and strategies. The teacher-learner must acquire the processes and strategies necessary to promote these types of learning. As an adult, the teacher-learner is focussing largely on solving personal problems, acquiring necessary role behaviours, and *transforming* meanings, values, skills, and strategies. He will learn through the processes most relevant to adult learning. To the extent that the child-related processes and adult-related processes are different, the teacher-learner may experience some confusion. This confusion is often compounded by learning programs for teachers designed on the basis of child-related learning processes. The solution needs to reflect two different emphases: learning processes and activities for teachers must allow for adult-related designs which provide for (i) a comparison between the two sets of learning processes, and (ii) the development of new strategies and values for child-related learning processes.

The fourth essential aspect of the teacher's experience is his need to integrate his learning experiences both horizontally and vertically. He must be aware of his past experience as it is integrated into his role as teacher and how it affects his teaching behaviour. He must also be aware of how his current non-teaching experiences are affecting his teaching behaviour and of how all his experiences are related to and integrated within his total life. Growth in awareness calls for learning related to development and involves extensive use of differentiating and integrating processes. (Arends, 1978; Cropley, 1977)

A teacher appears to require two sets of learning-related behaviours: one to guide and promote his own change, and one to guide his activities in a relationship which promotes the learning process of others. The requisites for guiding personal change include: inquiry skills; learning-how-to-learn skills; discovery skills; observing skills; linguistic skills (listenting and talking, reading and writing); tolerance for ambiguity; self-awareness; an ability to utilize one's own experience; an ability to utilize the resources and assistance provided by others; and self-assessment and self-feedback through observing, judging, and modifying one's own behaviour as it occurs.

The requisites for guiding the self in relationships which promote the learning of another include: an awareness of self in relationships;

communicating skills particularly in listening and being responsive; interviewing skills; an ability to utilize projective models; a willingness to flex to immediate circumstances; skills in clarifying and reflecting; skills in managing conflict and in leading and following; and skills in providing relevant feedback.

We tend to assume that any teacher will already possess the skills and strategies necessary for productive and creative learning. This is a faulty assumption, not borne out in practice. Each learning program should include an opportunity for individual assessment of the skills and strategies relevant to that learning. Those which are lacking will need to be included in the learning objectives and activities.

The teacher-learner can learn about teaching by observing a good role model in action and then having an opportunity to discuss, with that person, various aspects of the latter's teaching behaviour. Program designs which facilitate this type of learning require active involvement in a teaching-learning interaction (with specific learning objectives), followed by an opportunity to discuss the interaction (as a separate learning objective).

Teacher education must provide for a dual focus: on teaching methodology and knowledge about learners, learning outcomes, and so on; and on the knowledge, skills, values, and organizing principles of the subject to be taught. The first aspect can be learned best through the doing of each method for teaching, through experiencing the process as both learner and teacher. The second aspect can become the content around which the method is learned. Programs can be designed which use adult-related processes and activities and which offer experience of both aspects of teaching in creative ways. These programs, however, require very careful and thoughtful planning.

Teacher education proceeds more effectively when the teacher-learner has sufficient past experience to provide the raw data from which patterns, strategies, and organizing principles can emerge. Preparatory training always has a hypothetical quality unless it also includes ample opportunity to test new behaviours in controlled environments and in real classrooms under supervision.

We tend to assume that teacher-learners acquire and implement new teaching behaviours through a theory-into-practice process. If the teacher learns Piaget's cognitive theory, for example, we assume that he will immediately be able to apply its principles in a classroom setting. In

fact, teachers have considerable difficulty in perceiving how they can apply theoretical constructs in practical teacher-student interactions. Work by Ireland and his colleagues (1971) and by Hunt (1979) has shown:

- Teachers are more likely to utilize organizing principles which they have developed for themselves through reflecting on their own personal experience. This process could be described as "personal-experience-into-personal-constructs-into-practice."

- Teachers are more likely to utilize organizing principles from theory or other external sources when these principles bear a direct and discernible relationship to easily observable learner behaviour. This process could be described as "theory-into-personal-obsetvations-into-practice."

Hunt argues that the teacher must be able to function as a linking agent whose personal experience, meanings, and organizing principles provide the basis for building connections between theory and practice. This view suggests that learning programs should focus more on assisting teacher-learners to develop their own constructs, organizing principles, and strategies for teaching than on presenting the constructs of remote theorists.

We found, in the literature, two conflicting assumptions relative to the training of practising teachers:

- The first assumption suggests that all teachers should follow the same learning program since all are alike in role tasks and needs, and that these standardized programs can be implemented through either group processes which will meet all individual needs or through individual learning modules.

- The second assumption suggests that each teacher should be able to design his own individualized, self-directed learning program, especially tailored to his personal learning needs, and that this program can only be implemented through individual and independent activities.

Both assumptions appear to be valid within certain limits. Standardized programs and large-group activities reach many teacher-learners at reduced costs. The time lag between assessing needs and implementing a large program, however, may be too long for the program to have much real impact, for the learning needs of those involved may have changed in the meantime. Moreover, it is impossible to respond to all individual and group needs within one set of activities. Some learning needs can be served through group activities and some through individual activities. Individualized programs and personally designed activities have a greater impact on individuals and are more likely to bring about specific changes. However, such programs are too labour-intensive and prohibitively expensive.

The most pragmatic approach to teacher training involves some combination of large-group work, small-group work, and individual activities based on both individual and group learning needs. (Rubin, 1969; Arends, 1978)

There are several general statements which can be made about teachers' learning programs of all types. These include:

1) Teacher-learners should be involved in planning and implementing their own learning programs. The greater their involvement in the planning, the greater their commitment to change. (Klopf, 1969)

2) The objectives of any teacher learning program should be valued and rewarded, either explicitly or implicitly, by the power structure of the school and the school system. (Rubin, 1969)

3) Teacher learning is facilitated by the presence of an on-site coach, mentor, peer supervisor, or other agent. Ideally this person would be a practising teacher and should not be the principal or line supervisor. If an agent from outside the school staff is available, he should be involved with individual learners frequently and regularly on an ongoing basis. Such an agent could serve the needs of both the total staff group and individual teacher. One-time-only consultations from outside agents are not as effective as an ongoing relationship. (Rubin, 1969; Arends, 1978)

4) Change is easier to effect in group settings, particularly if changes in attitudes are sought. Individual needs, however, always outlive group needs. The group must be organized to serve individual as well as group objectives. (Rubin, 1969)

5) The needs of the individual teacher-learner should be perceived within the context of his school and staff group. The most appropriate learning group is the working staff unit. Enlarging the group beyond this unit reduces the effectiveness of the group setting. (Rubin, 1969)

6) Feedback about progress toward objectives must be ongoing and frequent. Working teachers generally prefer feedback which is low in direct content such as opinion, criticism, and concrete suggestions for improvement, and high in direct content such as praise, descriptions of what happened, and general suggestions for improvement. (Rubin, 1969; Russell, 1979)

There appears to be an identifiable series of developmental changes which occur as the individual teacher progresses within the profession. Gregore (1973) describes four phases of professional development: becoming, growing, maturing, and fully functioning. We do not yet know how long each phase lasts for a typical teacher or how these phases affect or are affected by general development in other areas of life. We can make some

predictions about the individual's learning needs during each phase of professional development. Gregore gives the following descriptions:

Phase 1 - Becoming: involves an ambivalent commitment to teaching and relative dependence on external goals and values of the system and the professional group; involves a low tolerance for ambiguity and low levels of improvisation and experimentation; personal assessment is usually in relation to standardized group norms. Basic learning needs are for methods, skills, strategies, and resources for teaching--a "bag of tricks." In program terms these needs suggest activities which are skill and content oriented in a wide variety of areas relevant to both teaching and subject area.

Phase 2 - Growing: involves a commitment to teaching based on minimal expectations; involves relative independence in the classroom and increasing stability of goals and values. Learning needs focus largely on expanding and consolidating skills, strategies, and resources.

The individual may stagnate here and become defensive about making drastic changes in his teaching behaviours. He may become inflexible as a teacher and may resist further professional development. The experience which will move him to the next phase involves an intervention by an external facilitator who can assist him to articulate and analyse his own organizing principles and values, and face up to any incongruencies or discrepancies within this personal system. This process, in turn, leads to the exploding of his old model of experience and to activities designed to create or discover a new model which is more in keeping with reality. Learning needs for this critical period involve opportunities for dialogue with a trusted facilitator or peer, for consciousness-raising, and for extensive support for change.

Phase 3 - Maturing: involves a strong commitment to teaching beyond the minimal expectations; involves progress toward interdependent functioning; involves increased improvisation and experimentation; involves increased tolerance for ambiguity. Learning needs focus largely on transforming perspectives about teaching and learning; on the discovery of personal meanings and values from which new perspectives can be created; on differentiating and integrating activities; on inquiry processes; and on guided self-assessment and self-feedback. In program terms these needs suggest activities which are person-centred, are based on self-defined needs and objectives, occur in group settings, provide peer support, and involve collaborative planning and learning.

Phase 4 - Fully functioning: involves a definite commitment to teaching based on personal values and goals and optimum expectations; involves continuous reassessment of personal meanings, values, skills, and strategies with accompanying revisions and reintegration; involves personal assessment based on self-referenced norms; involves learning activities which are self-directed; involves high tolerance for ambiguity and wide use of improvisation and experimentation. Learning needs focus largely on testing new behaviours and receiving feedback from peers; continuing opportunities for personal discovery, differentiating, and integrating; input from fields other than teaching; and opportunities for positive growth in personally established directions. In program terms these needs suggest activities which are self-planned, self-directed, and self-assessed with collaborating peers.

Gregore suggests that each time an individual is placed into a new professional situation he is likely to return, at least temporarily, to the Becoming phase and to work through each phase until he has returned to his previous level. Retraining involves the same learning needs and programs as are suggested in the Becoming phase. Professional development involves a diverse program which responds to the learning needs with activities suggested for all phases.

B. RETRAINING OF TEACHERS

To guide our consideration of the retraining of teachers we found it necessary to make several assumptions about the nature of the teacher-learners and the learning involved. These included the following:

1) Retraining may involve a personal request from an individual teacher, but more likely involves decisions made for that teacher by administrative or supervisory staff or pressures which have arisen from external conditions. The most likely reasons for retraining were assumed to be redundancy, reassignment, relocation, incompetence, or changes in the characteristics of the student population.

When redundancy displaces a teacher still in the Becoming phase (Gregore, 1973), he will probably withdraw from teaching. When it involves a teacher beyond this phase, he will more likely seek reassignment or relocation.

Reassignment might include teaching in a new subject area, shifting to an administrative or supervisory position, or moving to a new student population (e.g., to preschoolers or adult learners).

Relocation might include moving to a new geographic area which requires changes in teaching behaviours--as, for example, in moving from an urban to a rural centre, from a southern to a northern centre, or from a suburban to an inner-city area.

Incompetence would bring a teacher to retraining when a supervisor had assessed him as incompetent to perform his present work but competent enough to be retrained.

The characteristics of the student population change if the teacher moves to older or younger learners or to special categories of learners such as the vision- or hearing-impaired. A sudden change in the racial or ethnic mix within a school district might call for relevant retraining of an entire staff.

2) The changes suggested above all have the potential for threatening the individual teacher--some changes more than others. Perceptions of threat are likely to be accompanied by defensive behaviours and some resistance to the necessary learning. Retraining programs therefore probably require time and opportunities for reducing stress and anxiety and for individual teacher-learners to reassess themselves, reorganize their self-concepts, and rebuild their self-confidence. This process would need to occur before other learning could progress productively.

3) Retraining appears to involve some essential changes in the organizing principles with which the individual interprets and responds to teaching and learning activities. A new subject area will call for new organizing principles, some new skills and strategies for teaching, and extensive new resources, knowledge, and meanings. A shift in the characteristics of the student population will call for new values relative to these students, new skills and strategies for working with them, and alternative interpretations of experience. In some cases, old values, meanings, skills, and strategies will need to be completely replaced with new ones. In other cases, they will need to be modified to be responsive to new conditions and then reintegrated.

These needs suggest that retraining programs must provide for two facets of learning:

- activities which assist the teacher-learner to acquire new meanings, values, skills, and strategies. These will be similar to those designed for regular teacher training programs and will include mastery of skills and information.
- activities which assist the teacher-learner to transform old meanings, values, skills, and strategies. These will include consciousness-raising, discovery, and transforming activities in group settings, through person-centred processes.

Both facets call for problem discovery and problem solving, for experimenting with new behaviours, and for receiving feedback about the effectiveness of those behaviours.

A report by Draper and Barer-Stein (1979) suggests that the major concern of teachers who had shifted from teaching children to teaching adults was for a better understanding of and more skills for facilitating the interactions and relationships between adult learner and adult teacher and among group members. The second major concern was for further knowledge of and methods for teaching and planning with adult learners and for a better understanding of the basic differences between adults and

children as learners. Most of the teachers surveyed felt they were already competent enought in their specific subject area, but needed special skills and strategies for teaching adults.

C. PROFESSIONAL DEVELOPMENT FOR TEACHERS

To guide our considerations of the provision of professional development for teachers, we made the following assumptions:

1) Professional development focusses largely on maintaining personal stability and growth through continuing change and responsiveness to the environment. This concern is different from that of retraining, which tends to focus on re-establishing stability after it has been lost for some reason.

2) Professional development is both an individual pursuit of desired objectives for oneself and a group activity designed to develop and improve working relationships and conditions within a school. It needs to focus on both individual and group goals. Maintaining a balance between these two sets of goals requires collaborative planning and a flexible or emergent design for activities.

3) Professional development activities are most effective when carried out within the context of a working staff group. This context seems essential as a means to reduce the isolation and loneliness of the individual teacher, to provide an on-site supportive peer group, and to allow staff members to become part of an interdependent team which can benefit both individuals and school. The existence of a staff room does not necessarily lead to these particular outcomes.

A staff might assess their own group and individual needs at the beginning of the school year, establish basic directions and objectives to meet some of those needs, and collaborate in designing activities to be implemented by either individuals or the total group throughout the year. At the end of the year the staff would evaluate their progress toward group objectives and assist individuals to assess their progress toward individual objectives. The results of such an assessment would be used to develop tentative plans for the next year. The planned activities would also include provision for periodic assessment of progress and modification of objectives throughout the year, should this appear necessary. (Arends, 1978)

4) Teachers who have just begun to teach or who are still in the Becoming phase (Gregore, 1973) probably need structured assistance with

immediate problems, help with finding and utilizing resources, and basic teaching skills and strategies. They generally feel that with these supports they can get on with the immediate task of teaching and can learn from their experience at a later date. Beginning teachers have a low tolerance for extensive discussions which do not appear to be relevant to their immediate needs and pressing problems. They appreciate print resources and helpful hints which they can use later as they see fit. Their objective is largely to survive each day as it comes. Later they will have time for reflection and for assessing their needs for further learning. They are often unable to deal with group objectives, particularly if these bear little relationship to their individual concerns.

5) Professional development for a teacher who has stagnated in the Growing phase (Gregore, 1973) will require supportive and concerned consultation with a trained professional development officer or equivalent. The intervention of the latter is a critical step and requires considerable expertise on his part. The goals of consultation must be supported by the administrative and supervisory personnel related to the school. Consultations are easier to manage when they occur with a trusted external agent rather than with a critical principal or peer. Such an agent should have training in the areas of conselling and adult learning and planning. He should also have an ongoing relationship with the school staff if he is to develop the trusting relationships necessary to work with individual teachers.

6) The most basic component of professional development appears to be self-assessment accompanied by activities that encourage differentiating and integrating. The individual teacher needs to be assisted to develop the skills necessary for these activities and to be able to provide feedback to himself about his own teaching performance as it occurs.

7 Summary of Learning Principles with Implications for Facilitating Learning and Planning Programs

1. LEARNING PRINCIPLE

Adult behaviour is not fixed but changes in response to both internal and external pressures. Adults can and do learn throughout their entire lifetime.

Facilitating Implications:

Change and learning are normal adult activities. Adult learning is facilitated not so much through the teacher's motivating and initiating the learning process as through his removing or reducing obstacles to learning and enhancing the individual's learning process once it has begun.

Planning Implications:

Program planning relates to removing and reducing obstacles to learning and to enhancing individual learning processes and group activities. Adult learners do not remain long in programs which make obstacles worse and provide disincentives to learning.

2. LEARNING PRINCIPLE

Adults enter learning activities with an organized set of descriptions and feelings about themselves which influence their learning processes. The descriptions are the self-concept; the feelings are the self-esteem. Both are based on past experience and on how that experience was interpreted and valued by the learner.

Corollary:

Adult teachers enter teaching activities with an organized self-concept and self-esteem which influence their teaching processes. Teachers must have an awareness of how their self-concept and self-esteem affect their own behaviours and their relationships with learners.

Facilitating Implications:

Adult learning is facilitated when the self-concept and self-esteem of each learner are valued as they are presented by the learner. The adult teacher must be aware of how he is conceptualizing adult learners and, for each learner, how this conceptualization differs from the way the learner conceptualizes himself. In cases of incongruence, the learner's self-concept should be used to guide the teacher's responses, rather than the teacher's concept of that learner.

Planning Implications

Program planning should provide for sufficient discretionary time to allow the teacher to make individual responses to each learner. Adult learners require time and opportunities to modify their self-concept in response to learning.

3. LEARNING PRINCIPLE

The past experience an adult learner brings to any learning activity is both a helpful resource for further learning and an unavoidable potential hindrance. Past experience is stored in memory, is organized according to individualized strategies, and is assigned individualized meanings and values. These meanings, values, and strategies will determine how the individual will interpret new experiences and how he will learn. The adult learner needs to be aware of his own meanings, values, and strategies, and of the way he uses these to plan, make decisions, solve problems, assess information, respond to immediate experience, and relate to others.

Corollary:

Adult teachers enter teaching activities with past experience which can serve as a practical resource for both teaching and learning. The meanings, values, skills, and strategies involved in interpreting and organizing the teacher's experience provide an equally valid version of reality. The teacher's version is not better than that of the learner, only different. The teacher needs an awareness of his meanings, values, skills, and strategies, and of the way they affect his teaching behaviour and his relationship with learners.

Facilitating Implications:

Adult learning is facilitated when the learner's representation and interpretation of his own experience are accepted as valid, acknowledged as an essential aspect influencing change, and respected as a potential resource for learning. The teacher can express positive regard for the learner and utilize the learner's past experience directly or indirectly in the teaching process.

Planning Implications:

Program plans should include opportunities for learners to compare and integrate new learnings with past experience and to modify, when necessary, meanings and values assigned to past experience.

4. LEARNING PRINCIPLE

Part of the adult learner's past experience is organized and integrated into his self-concept and self-esteem. The adult learner needs to feel his past experience is respected and valued by others. When it is not valued, he may feel devalued as a person.

The adult learner meeds to be able to respect his own past experience, to value it as a potential resource for his own learning, and to be aware of those times when it becomes a potential hindrance to further learning.

Corollary:

Adult teachers must be willing and able to respect their own past experience as a potential resource for teaching and learning, to value

the past experience of others, and to value both the similarities and differences among those experiences.

Facilitating Implications:

Adult learning is facilitated when the adult teacher is aware of how he behaves in interactions with adult learners, of how willing he is to share his own past experience with learners, and of how he values both learners and their experience. The teacher must be committed to the learning of others, be accountable for his own behaviour, be responsive to the learner's needs and experiences, be open to new information, be able to deal with conflicts and inconsistencies, and be able to express positive regard and empathy toward learners.

The adult teacher requires projective models or plans for teaching and learning which guide the direction of activities but remain responsive to the immediacy of the situation. The teacher thus must acquire competent skills and background knowledge and values relevant to teaching adults.

Planning Implications:

Program plans require enough flexibility to remain responsive to immediate feedback and to be changeable without threat to the planner.

5. LEARNING PRINCIPLE

When past experience can be applied directly to current experience, learning is facilitated. When past experience can be applied only indirectly, the adult learner may have some difficulty perceiving connections and making transfers.

Facilitating Implications:

Adult learning is facilitated when past experience is applied to current learning through divergent, non-sequential, analogical cognitive processes. These include metaphors, analogies, graphs, figures, drawings, games, and so on.

Adult learning is facilitated when the learner can focus on his own personal meanings and values through self-reflection in an environment which is free from threat and in which interpersonal relationships are based on trust.

Planning Implications:

Planned activities should include divergent, non-sequential, global, analogical cognitive activities which allow the learner to reflect on the connections, both explicit and implicit, between his past experience and present learning.

Planned learning processes should appear to the learner to be relevant to life experiences, both past and present. Learning content should bear some relationship to the learner's past experience and current concerns.

Planned activities should provide opportunities for learners to reflect on their own past experience without the threat of being judged or evaluated.

6. LEARNING PRINCIPLE

Past experience becomes increasingly important as an adult grows older. Its potential for helping or hindering also increases.

Corollary:

Older adult learners have a tendency to focus more extensively on past experiences than on their hopes and expectations for the future or on the specifics of their current experience. This tendency has an effect on both planning and learning.

Facilitating Implications:

Adult learning is facilitated when adult learners have time to reflect on past experience and integrate new learnings. The teacher can help in this process by reducing time constraints on the learning activities. The time for reflecting and integrating should be increased for older learners.

Focussing on current experience is facilitated when the learning environment is threat-free and the interpersonal relationships are based on trust.

Planning Implications:

Program plans for adult learning should provide for adequate time and opportunities for integrating and reflecting both during learning sessions and between sessions.

7. LEARNING PRINCIPLE

Adults with a positive self-concept and high self-esteem are more responsive to learning and less threatened by learning environments and the process of change. Adults with a negative self-concept and low self-esteem are less likely to enter learning activities willingly and are often threatened by both learning environments and the process of change. Adults learn best in environments which reduce any potential threat to their self-concept and self-esteem, and which provide support for change.

Corollary:

Teachers with a positive self-concept and high self-esteem are more effective in teaching activities and less threatened by the teaching-learning interaction. Teachers with a negative self-concept and low self-esteem are less effective in teaching activities and potentially threatened by the teaching-learning interaction.

Facilitating Implications:

Adult learning is facilitated by learning environments which are free from threat and which provide personal support for change. The teaching and learning activities need to include provision for testing new behaviours in relative safety, for developing mutually trusting relationships, for encouraging openness to feedback, and for reducing anxiety and fear of failure. Plans for learning behaviours should include a built-in success factor. Teachers need to remain flexible and responsive in spite of potential threats to their own self-concept or self-esteem.

Planning Implications:

Program plans need to include activities which assist the learner to specify and clarify behaviours to be learned or changed, and specify and describe desired outcomes; which provide feedback in terms relevant to those behaviours and outcomes; which provide descriptive feedback that does not imply value judgments and that suggests possible future changes; which build good interpersonal relationships among learners and teachers; and which provide activities through which new behaviour can be implemented.

8. LEARNING PRINCIPLE

The most essential component of the self-concept relevant to learning is past experience attached to the role of learner and the resulting meanings, values, skills, and strategies. An adult learns best when he values the role of learner for himself; when he experiences himself as a competent learner; when he possesses the skills and strategies necessary for managing his own learning and for processing information through multiple channels; when he values and can use his past experience as a resource for current learning; when he values the status of learner as a worthy one for adults in society; when he can utilize the resources provided by others for himself; and when he values himself as a resource for others.

Corollary:

The self-concept of a teacher also includes experience relevant to the role of learner. The adult teacher needs to value this role for himself and to function in ways which imply that the role of learner is equal to the role of teacher.

Facilitating Implications:

Adult learning is facilitated when the adult teacher is willing and able to model the role of learner and to learn as he teaches. As a learner, the teacher must be willing and able to learn about the specific learners in his program and to be responsive to their needs and learning styles.

Adult learning is facilitated when each learner can participate in and be responsible for the planning and implementing of his own learning objectives, activities, and assessment--that is, when he assumes the role of interdependent learner as much as possible.

Planning Implications:

The adult teacher needs to plan a program such that he himself has time and opportunity to reflect on, modify, and integrate new teaching behaviours. This process will probably occur between learning sessions, but when carried out during learning sessions it provides the learners with a model of the learner role.

The teacher needs to establish clear objectives and directions that will guide his own teaching behaviour and to develop activities for monitoring that behaviour through self-feedback. These objectives should be shared with learners at the start of the learning program.

Planning should include opportunities for learners to participate in and accept responsibility for planning and implementing their own learning objectives, activities, and assessment. A collaborative planning process is required.

9. LEARNING PRINCIPLE

Past experience presents the adult learner with a paradox in the learning situation. On the one hand, the stability of past experience and the learner's self-concept lead to confidence and a willingness to enter into the process of change. On the other hand, the process of change has the potential for changing the meanings, values, skills, and strategies of past experience and the self-concept, thereby temporarily destabilizing both. This lack of stability may lead to loss of confidence and to possible withdrawal from the process of change.

Corollary:

The adult teacher must also deal with the paradox of experiencing

temporary instability within his own organized meanings, values, skills, and strategies while simultaneously assisting the learner to cope with the same problem.

Facilitating Implications:

Adult learning is facilitated when teaching activities do not demand finalized, correct answers and closure; express a tolerance for uncertainty, inconsistency, and diversity; and promote both question-asking and -answering, problem-finding and problem-solving. The learner can better cope with paradox if communication is two-way and if the learning situation is free from threat.

Planning Implications:

Program plans which enhance coping with paradox are based on inquiry processes and open-ended questions, on opportunities for clarifying issues, and on tentative summaries followed by testing and experimenting activities.

10. LEARNING PRINCIPLE

Adult learners enter learning programs with immediate and personal needs, problems, feelings, hopes, and expectations. The feelings and needs are present-tense and are directly related to the learner's current life experience, tasks, relationships, and problems and indirectly related to his past experience. These present-tense feelings and needs must be respected and recognized. Those which create obstacles to learning must be reduced or removed at the beginning of the learning program. More specific obstacles can include problems in registering, funding, attending, succeeding, and completing the program. Other obstacles may be related to conflicts between family and work responsibilities and learning responsibilities. All these obstacles are appropriate for discussion in teacher-learner relationships.

Corollary:

Teachers enter teaching activities with immediate and personal needs and feelings which are directly related to their current life experience and indirectly related to their past experience. These needs and feelings must be respected, recognized, and dealt with by the teacher when they create a negative effect on teaching behaviours.

Facilitating Implications:

Adult learning is facilitated when the learner is valued as he presents himself and when his most pressing negative concerns are dealt with as a priority. Dealing with these concerns requires interpersonal dialogue, clarification of needs and expectations, relief from anxiety, and so on.

Planning Implications:

Program plans for the first session(s) should focus on creating an environment which is supportive of the learner and free from threat and which allows each learner to discover how he, as an individual, can comfortably participate in the program, contribute to the learning of others, and utilize others as a resource for himself.

11. LEARNING PRINCIPLE

Adult learning tends to focus on the problems, concerns, tasks, and needs of the individual's current life situation. Adults are highly motivated to learn in areas relevant to their current developmental tasks, social roles, life crises, and transition periods.

Corollary:

The adult teacher also experiences current needs and problems relevant to life experiences and developmental stage. These, in turn, may affect the content and processes the teacher is likely to select for use in any teaching activity. The teacher therefore needs to be aware of his own current life experiences and developmental concerns and of how these might influence his teaching behaviour.

Facilitating Implications:

Adult learning is facilitated when the content or learning processes and resources are relevant to the individual's current needs and problems, tasks and roles, developmental concerns, and life experiences. Adult learning is facilitated when the material to be learned or the skills and strategies involved in the learning process can be applied immediately to real-life experiences.

Adults may need considerable assistance in verbalizing and clarifying their current needs and concerns and in turning these into learning needs and objectives.

Planning Implications:

Program plans can be designed around the actual current needs of learners. Resources and content can be developed which are directly or indirectly related to those needs. Processes can be planned which reflect the skills and strategies required to meet those needs.

Programs based on content and processes not related in some way to the learner's current life concerns should include activities which allow the learner to reflect on the indirect connections between past and present experience, new learnings, and future applications.

In any group of adult learners there will be a wide assortment of learning needs and real-life problems. Program activities need to be included which allow all group members to discover, acknowledge, and accept the learning needs of other learners and to understand that each learner's needs must be connected, in some way, to the objectives of any group activity.

12. LEARNING PRINCIPLE

When adult learning focusses on the personal problems of an individual learner, the solutions to those problems must come from his own personal values and expectations, be implemented through his personal resources and skills, and be congruent with his personal meanings, strategies, and life-style.

Facilitating Implications:

Adult learning which is designed to solve problems is facilitated when the learner works on his own problems and develops his own solutions, rather than working on hypothetical problems and accepting prescribed solutions, and when the solutions can be tested in "safe" environments or applied immediately to real-life situations and the results discussed with the teacher.

Planning Implications:

Program plans should be designed so that individual learners will have sufficient opportunities to work on their own concerns and learning needs, to test their tentative solutions, and to discuss the outcomes with others.

13. LEARNING PRINCIPLE

When adult learning focusses on the acquisition of skills and strategies, the learner must personally participate in activities in which the relevant skills and strategies are used. The learner must be aware of the inadequacy or limitations of his present skills and strategies and of alternative new or modified skills and strategies. The learner must have a clear idea of the behaviours that constitute the skill or strategy.

Facilitating Implications:

Adult skill learning is facilitated when individual learners can assess their own skills and strategies to discover inadequacies or limitations for themselves. This assessment can then be used to develop specific learning objectives. Such objectives should contain a clear description of the skill or strategy to be learned. Adult learners must have opportunities to actively use the skills and strategies they are learning, preferably at first in "safe" environments.

Planning Implications:

Program plans need to include opportunities to develop specific behavioural objectives that constitute exercise of the skills and strategies to be learned and to use these behaviours in test situations.

14. LEARNING PRINCIPLE

Some adult learning focusses on transforming the meanings, values, strategies, and skills derived from past experience. The act of transforming previous experience requires more time and energy than other types of learning. It also requires having a raised consciousness, reexamining figure-ground relationships, and redefining personal values and meanings, as well as testing new meanings, values, strategies, and skills.

Facilitating Implications:

Adult learning which involves transformation is facilitated through person-centred and consciousness-raising activities. Cognitive processes need to focus on the existing figure-ground relationships and on the possibilities for new relationships and organizing principles. These new relationships must then be reintegrated into experience and changes made in the interpretation of past experience when necessary.

Planning Implications:

Program plans should include learner-centred processes and content. New content cannot be introduced in the transformation process until the old meanings and values have been reexamined and redefined. The learning objectives and needs must be established by collaborative planning and should not be presupposed by the teacher.

15. LEARNING PRINCIPLE

Motives are the felt needs with which the adult learner begins a learning activity. These may relate to unmet needs or unwanted conditions in life or to the pursuit of positive change in the direction of desired goals. The adult learner is generally more concerned with the changes he experiences in the direction he has chosen and his resulting satisfaction than with meeting the standards and objectives set by others and their satisfaction with his performance.

Facilitating Implications:

Adult learning will be more satisfying for the learner when he assesses his own learning needs and selects his own learning objectives and direction. If this is not possible, then the learner should have a full understanding of the objectives already selected for the learning program, should be able to accept these, and should become committed to them.

Planning Implications:

Program plans should include an opportunity for adult learners to assess their own needs and establish their own objectives. If this is not possible, the teacher should be prepared to provide full information about the objectives already selected so that learners may choose to withdraw if they wish or to redefine their own objectives to conform with those of the program.

16. LEARNING PRINCIPLE

An adult learner who enters a learning program voluntarily as a result of unmet needs or unwanted conditions in his life or non-voluntarily as a result of demands from external sources may feel threatened and anxious about learning. A learner who enters a program voluntarily in pursuit of positive personal goals is less likely to feel threatened or anxious.

Facilitating Implications:

Adult learning is facilitated when the adult teacher has an awareness and an understanding of the conditions and needs which bring individual learners to a program. Those who are threatened or anxious may require extra support, encouragement, and assistance.

Planning Implications:

Program plans should include time at the start of activities for the learners and teacher to share some of their current concerns and expectations, even if the program is not designed to serve individual needs and promote problem-solving.

17. LEARNING PRINCIPLE

As an adult learner changes in the direction he selected or to which he was committed, some of his needs are met and are replaced by new ones, and some of his objectives are met or are redefined on the basis of his progress. The meeting of needs leads to feelings of satisfaction. Information about his progress toward his objectives is provided through feedback and leads to feelings of success (or failure). Feedback is essential if the adult learner is to modify his behaviour in an ongoing way. Feedback can only be given when the learner has acted in ways which

can be observed by others. He must perform the skill or strategy to be learned or reproduce the knowledge or values in representational form (talking, writing, drawing, and so on). Feedback which is immediate has greater potential for affecting learning. The longer the interval between the act and the feedback, the less likely it is that the feedback will have a positive effect on learning. Feedback which is descriptive and implies a possible correction is more helpful than feedback which is judgmental and demands correction.

Facilitating Implications:

Adult learning is facilitated when the learner has a clear idea of the behaviour to be learned; when the behaviour is specified through objectives which imply comparisons and potential changes; when the learner has opportunities to use the behaviour to be learned; when feedback is provided in terms relevant to the stated objectives and in ways which do not imply value judgments. Learning is facilitated when feedback is immediate. Learning is facilitated when feedback about skills and strategies is task-oriented, when feedback about knowledge is information-oriented, and when feedback about personal meanings and values is feeling-oriented. Learning is facilitated when feedback is provided in an ongoing way throughout the entire program so as to allow for continuous assessment of progress and for continuous modification of behaviour.

Planning Implications:

Program plans should include activities which allow the learner to specify and clarify his own learning objectives; to specify the type of feedback he prefers or needs; to test new behaviours; to receive feedback in non-threatening ways; and to modify his objectives and behaviours in an ongoing way.

18. LEARNING PRINCIPLE

Success in satisfying needs and reaching established objectives becomes a reinforcer for the changes already made and a motive for further learning. Failure to satisfy needs or reach objectives may become a reinforcer for avoiding change and a motive for withdrawing. Reinforcement can come from feedback about success or failure; from the comments of a valued external observer; and/or from the learner's own feelings of accomplishment or failure. The earlier these feelings of satisfaction and success come in the learning program, the more likely it is that they will motivate further learning for that program. Satisfaction and success which occur at the end of a program can only motivate the adult to proceed to a new program and can have no positive benefit for the program just completed.

Facilitating Implications:

Adult learning is facilitated when learning activities are designed so that success is a built-in factor. Success and satisfaction at the beginning of a program lead to further motivation and further learning. Ongoing opportunities for success and satisfaction will facilitate continuous learning and continuous high motivation levels.

Planning Implications:

Program plans should include early opportunities for specific and relevant learning activities which have a high likelihood for individual

success. Such opportunities should occur regularly and frequently to keep motivation high. Final feedback and feelings of success and satisfaction can be used to plan further learning activities beyond the current program.

19. LEARNING PRINCIPLE

Learning involves the arousal and energy deployment system of the human body. Minimum levels of arousal are required to create the internal conditions necessary for conscious learning. The behaviour of an adult who is learning can be described as excited or agitated, slightly confused or disoriented, possibly fearful or frustrated.

Excessive arousal leads to general stress reaction, anxiety, and increasing negative emotions (anger and fear). The distressed adult behaves as if he were threatened and channels his energy into defensive behaviours. Adult learners tend to have well-organized defence systems which mask stress and its accompanying emotions but do not alleviate it. Defensive behaviour requires energy which consequently is not available for learning.

Stress reactions which continue for too long without resolution lead to physical and behavioural breakdown, depression, disorientation, withdrawal, confusion, extreme agitation, dependency, and poor communicating. The poor communicating takes the form of repetitive phrases, confused thinking, almost nonexistent listening, and so on.

Stress, anxiety, and the accompanying emotions interfere with adult learning in several ways:

- Adults tend to begin learning programs under some stress. Further arousal through the actions or demands of the teacher is counter-productive.

- Learning tends to increase the possibility of uncertainty and instability, which become causes for stress reactions.

- Adults do not like to appear upset in public, and any general stress reaction may cause the adult further stress as he tries to mask his emotions.

Facilitating Implications:

Adult learning is facilitated when stress and anxiety are reduced by the teacher's taking care not to create prolonged or unnecessary arousal; reducing threat in the learning environment; creating a climate which supports individual learners and assists in reducing internal feelings of threat; providing opportunities to talk through anxieties relevant to learning and the learning program; providing ample time for learning to occur and opportunities to practise new behaviours; and providing novel information in a variety of different formats.

The teacher should focus on reducing initial anxiety rather than increasing initial motivation, and on providing ongoing opportunities for success and personal satisfaction throughout the program to support continuing motivation.

Planning Implications:

Program plans should provide activities at the beginning of a program to reduce anxiety and sense of threat; activities throughout the program to deal with stress as it arises; and activities which assure success and satisfaction in reaching objectives followed by feedback and modification of objectives.

20. LEARNING PRINCIPLE

The behaviour of an adult who is learning can be described as excited, agitated, fearful, disoriented, confused, frustrated, and so on. These terms are also often used to describe childlike behaviours. The behaviour of an adult who is experiencing severe stress or anxiety can be described as extremely agitated, disoriented, confused, depressed, withdrawn, fearful, angry, apathetic, and so on. A distressed person may use dependent behaviours and very poor communicating skills. His information-processing skills may decline temporarily and he may delete, distort, over-generalize, or over-simplify incoming information. His communicating skills may reflect the same types of errors: not listening to others, using confused or repetitive messages, omitting essential details, and so on. These terms are also used to describe childlike behaviours and are categorized as immature and childish.

The energy mobilized through stimulation or arousal can be channelled equally well into learning or into anxiety and self-defence (i.e., resistance to learning). The resulting behaviours can be labelled equally well as childish and immature or as learning and changing (and hence as adult and mature). This labelling is dependent on the specific conditions involved and the teacher's attitudes toward such behaviour.

Adults who have been labelled as childish and immature will likely withdraw still further from the learning process and become more distressed.

Facilitating Implications:

Adult learning is facilitated by a teacher who can make distinctions between distressed behaviour and learning behaviour and can respond to both without labelling either as childish or immature.

If the learner's communicating skills or information-processing skills become temporarily inadequate, the teacher can ease the situation by (a) reducing anxiety levels and (b) compensating for the learner's temporary decline in ability.

Adult learning is facilitated through effective two-way communicating which emphasizes learner talking, self-reflecting, clarifying, and summarizing and teacher listening and reflecting.

Planning Implications:

Program plans should include enough discretionary time to deal with anxiety without creating unnecessary pressures on other activities.

21. LEARNING PRINCIPLE

Adults do not learn productively when under severe time constraints. They tend to learn best when they can set their own pace. Their reduced speed is compensated for by improved efficiency and competence in learning strategies.

Facilitating Implications:

Adult learning is facilitated when sufficient time is provided for individual learners to establish their own pace and when the requirements to learn within certain time limits are reduced or removed.

Planning Implications:

Program planning should include an assessment of the time required to complete any learning activity and should allow for additional time to accommodate individual differences in pace.

22. LEARNING PRINCIPLE

Adults tend to experience a need to learn quickly and to get back to their work and family activities and responsibilities. They are often reluctant to engage in learning programs which appear to "waste their time" because the content or processes do not have an immediate and pragmatic application within their life.

Facilitating Implications:

Adult learning is facilitated when the learning content and processes bear some relevance to the learner's current concerns and when he can learn what he needs within an optimum period of time as defined by his needs and problems.

Planning Implications:

Programs should focus on practical material which is relevant to the current or future concerns of the learner; should include processes which can be utilized in life experiences; and should provide for the most productive conjunction between what is desired and what is possible. If learning content is not directly related, then time should be included to allow for discovery of indirect relationships.

23. LEARNING PRINCIPLE

Adults learn best when they are in good health, are well rested, and are not experiencing stress.

Facilitating Implications:

Adult learning is facilitated when the teacher is sensitive to the phsyical and emotional well-being of individual learners.

Planning Implications:

Programs should include opportunities for teachers to observe individual learners and to develop an awareness of their varying degrees of emotional and physical well-being.

Learning sessions should be scheduled at times which do not conflict with other responsibilities of the learners and which do not follow other activities with high energy demands.

Learning sessions should include opportunities to relax after intensive learning and to replenish energy levels, through coffee breaks, exercise breaks, and so on.

24. LEARNING PRINCIPLE

Adults learn best when their vision and hearing are in the best condition possible. Without good sensory capabilities, the learner will take in reduced or inaccurate information. Adults react to learning experiences and information as they perceive them, not necessarily as the teacher presents them.

Facilitating Implications:

Adult learning is facilitated when the environmental conditions reduce distortion in sensory information, compensate for unavoidable loss of sensory acuity, and provide information through a variety of sensory modes and formats.

Adult learning is facilitated when information, particularly

novel information, is presented in sufficient quantities to provide for repetitions and variations on themes so as to allow patterns and distinctions to emerge.

Planning Implications:

Pre-planning by the teacher and the institution should include collecting and making available a wide range of learning resources in a variety of sensory formats. Plans should always consider the physical arrangements necessary for films to be clearly seen, tapes to be clearly heard, small-group discussions to be adequately isolated, etc.

25. LEARNING PRINCIPLE

Overall mental ability of adult learners generally declines slightly over age 50. Verbal ability does not decline and may increase. Non-verbal ability does decline. Declines are largely related to learning which requires speed, physical flexibility, and memory recall, rather than learning which requires reasoning or past experience. The declines appear to be related to changes in energy levels and to a drop in the rate of nervous impulses.

Facilitating Implications:

Adult learning is facilitated when the learner can develop strategies which will compensate for declines in memory and speed of response. Assisting the learner to acquire basic organizing principles with many interconnections facilitates storage and retrieval from memory. He can be helped to learn to process information through several different channels and thus enhance the variety of relationships developed among meanings, values, skills, and strategies.

Adult learning is facilitated when the learner has developed strategies for dealing with the stress of forgetting. Such stress simply leads to more forgetting.

Planning Implications:

The program needs to be free from excessive time constraints, and must present a variety of different methods for processing the same information and for examining the variety of alternative meanings which can be attached to each experience.

26. LEARNING PRINCIPLE

Adult learners each have an individualistic learning style for effecting change in their behaviour and an individualistic cognitive style for processing information. Each cognitive and learning style is effective and adaptive in some situations and ineffective in others.

Adults learn most productively and satisfactorily when their learning and cognitive styles match those of the teacher. There is no "one best way" for adults to learn.

Corollary:

Adult teachers each have an individualistic style for teaching others, a learning style for their own learning, and a cognitive style for their own information-processing. A teacher is most effective when his teaching style is congruent with his learning and cognitive styles and with his planning processes.

Facilitating Implications:

Adult learning is facilitated by: (i) a teacher whose learning and cognitive styles match those of the individual learner; or (ii) a teacher whose repertoire of teaching styles is extensive enough to respond to several different learning and cognitive styles. There is no "one best way" to teach adults. Each teaching style is appropriate for some learners, in some settings, and for some content.

Planning Implications:

Programs should include a variety of activities, each of which facilitates a different learning or cognitive style. The teacher must be able to use a model of teaching which is responsive to individual styles.

27. LEARNING PRINCIPLE

Some theories of cognitive style predict a developmental process from child to adult styles. Adult learners may not have all reached the adult style predicted. This non-attainment may be the result of obstacles to change; of a mismatch with the environment; or of lack of specific types of learning experiences. Some adults have reached the predicted style but do not utilize it in current learning. Non-use appears to be the result of environmental conditions which demand other styles.

Facilitating Implications:

Adult learning is facilitated when the teacher is aware that all learners do not use the same style and have not all reached the same cognitive development level; when the teacher takes the time to discover the individual styles of each learner; and when the teacher makes an effort to respond to individual styles whenever possible.

Planning Implications:

Programs should begin with activities which respond to the current cognitive and learning style of learners. Initial activities should be designed to provide the teacher with information about the cognitive and learning styles of each learner.

28. LEARNING PRINCIPLE

In theories of cognitive style which predict a developmental process from childhood to adulthood, there are two types of matches between teacher style and learner style. One involves the teacher and learner utilizing similar styles, and results in satisfaction for both. The second occurs when the teacher is one developmental level higher than the learner; this match results in the development of the learner to the teacher's level, and in satisfaction. All other combinations are perceived as mismatches.

Facilitating Implications:

Adult learning is facilitated when teacher and learner are matched on cognitive or learning style. However, mismatches do occur and the resulting lessened satisfaction cannot be considered to be a failure for either the teacher or the learner.

Adult learning is facilitated when the teacher is aware of those learners with whom he is mismatched and is prepared to acknowledge difference and to provide other alternatives. No individual teacher can be ideal for all adult learners.

Planning Implications:

Programs which are planned so as to be responsive to immediate feedback and to be changed as necessary are of particular value here. Plans need to include some idea as to how difficult mismatches can be resolved.

29. LEARNING PRINCIPLE

Any group of adult learners will be heterogeneous in terms of learning and cognitive styles. Learners tend to be relatively proficient at self-selecting those learning programs which best enhance their individual learning and cognitive styles.

Facilitating Implications:

Adult learning is facilitated when the teacher is able to respond to a variety of learning and cognitive styles and to acknowledge his inability to respond to others.

Adult learning is facilitated when no one cognitive or learning style is valued over any other, when the differences between styles are respected, and when the strengths and weaknesses of each style are recognized by both teachers and learners.

Planning Implications:

Program plans need to be flexible and responsive enough to deal with a wide variety of learning and cognitive styles. Emergent plans are the most likely to be responsive to the heterogeneity found in adult learning groups.

30. LEARNING PRINCIPLE

Cognitive styles and learning styles are independent of mental ability.

Facilitating Implications:

Adult learning is facilitated when the teacher recognizes that mental ability is not related to cognitive or learning style. Each style is represented among those of both high and low mental ability.

Planning Implications:

All cognitive and learning styles must be recognized and planned for if each individual is to learn to the best of his ability.

31. LEARNING PRINCIPLE

All adult learners do not necessarily possess all the meanings, values, skills, and strategies required for effective learning or assumed to be an essential component of adulthood. Helping the learner to acquire missing components or adjusting activities to accommodate deficits must be regarded as an essential part of all learning programs. However, pre-planning in this regard is of limited value inasmuch as the assistance needed depends on the background and experience of the particular individuals participating in the program.

Facilitating Implications:

Adult learning is facilitated when the teacher assists individual learners to assess their meanings, values, skills, and strategies to

determine which essential components are missing and which might be required for further learning. Remedies for identified deficits should then be integrated into planned learning activities.

Planning Implications:

Programs should begin with individual adult learners' making an assessment of what they do know, what they don't know, and what they want or need to know. In a group of learners, the learning needs must then be integrated and activities planned to focus on common denominators. Individual learning objectives can be developed which follow from these learning needs.

32. LEARNING PRINCIPLE

An individual adult experiences developmental changes over his lifetime. These changes involve two learning processes: differentiating and integrating. There appear to be intensive periods of change or transition involving these two processes which occur roughly at the close of each decade of life and which extend over 18 to 24 months. Those transitions which occur at 20, 40, and 60 years are viewed as major; those which occur at 30, 50, and 70 years are viewed as minor. The adult learner is apt to be responsive to learning programs related to specific roles and tasks between transition periods, and to learning programs related to personal meanings and values and to the self-concept during transition periods.

Facilitating Implications:

Adult learning is facilitated when the adult teacher is sensitive to individual needs and concerns and when a variety of different types of learning programs are available.

Planning Implications:

Programs need to be developed which provide learning opportunities around the same general content but with different emphases: some should focus on information-processing and some on personal learning.

33. LEARNING PRINCIPLE

Learning activities are cyclical, sequential, and unidirectional when carried out at a conscious level. The activity with which one starts the learning process is a reflection of personal preference and determines the basic type of learning which will result. Each starting activity suggests a corresponding teaching and planning activity and process.

Adult learners prefer to start with their own preferred learning style and to avoid those activities which cause them stress and anxiety.

Corollary:

Adult teachers prefer to begin teaching with their own preferred learning or teaching style or with the one preceding it in the cycle, and to avoid those teaching activities which cause them stress as learners.

Facilitating and Planning Implications:

Adult learning is facilitated when the adult teacher understands the implications of selecting certain starting activities and the probable outcomes of that process. For example:

In information-processing models, learning begins with the intake

of information by the learner. The teacher thus prepares by choosing what information is to be presented and how. The activity continues with the learner interpreting, analysing, manipulating, and transforming information; developing intentions and deciding on actions; and, finally, acting in ways which are observable to others. Feedback, success, and satisfaction come at the end of the learning activity and may be delayed until the next learning session. Their power to motivate the learner is diffused unless the learning cycles are very short.

In humanistic models, learning begins with the analysis of information for personal meaning and value. The teacher thus prepares activities aimed at helping the learner recall and reflect on relevant information with its attached meanings and values. The activity continues with the learner analysing, manipulating, and transforming meanings and values; developing intentions and deciding on actions; acting in ways which are observable to others; and, finally, receiving feedback about those actions from both self and others as well as new information. Feedback, success, and satisfaction appear as the activity progresses. They initially affect the learner's feelings about himself as a learner. The motivating power of these feelings will carry over to the next learning session.

In experiential models, learning begins with the learner acting within a situation. The teacher thus prepares activities aimed at creating a specific situation which the learner shares with others. The activity continues with the learner observing his own behaviour and environment; interpreting, analysing, manipulating, and transforming his observations; and, finally, developing intentions and deciding on actions which will lead to changes in behaviour in the future. Feedback, success, and satisfaction come at the beginning of the learning activities. They initially affect the learner's self-esteem and later lead to changes in his self-concept and plans for changes in behaviour. The motivating power of these plans lies in their potential for enhancing the learner's anticipation about the next learning session.

34. LEARNING PRINCIPLE

When adult learners and teachers interact, their behaviours affect and modify each other. These interactions are constructive when both can be responsive to each other, accountable for their own behaviour, open to feedback from each other, and trusting of each other. Teaching and learning are both enhanced when teachers and learners share in choosing directions, providing input, designing and implementing activities, and assessing outcomes. These shared aspects of teaching and learning reduce the need for one or the other to accept full responsibility for the interaction and therefore reduce the threat for both. These shared aspects of teaching and learning promote a positive regard and respect for the experiences, meanings, values, skills, strategies, and self-concept of both.

Facilitating Implications:

Adult learning is facilitated when the teacher can give up some of his control over teaching processes and planning activities and can share these with learners.

Adult learning is facilitated when the teacher is willing and able to learn from, with, and about learners and is willing to share these learnings with those learners.

Planning Implications:

Program plans which are most effective with adult learners include both planned events and emergent events and provide for the learning activities of the teacher as well as the learners.

35. LEARNING PRINCIPLE

Adult learning focusses on learning both for autonomous mastery of one's life and for belonging to and participating in groups. Both needs are important. Learning programs which omit one in favour of the other will provide less satisfaction to the learner.

Facilitating and Planning Implications:

Adult learning is facilitated when planned activities provide for a balance between individual learning and group activity, and between autonomous, independent functioning and interdependent, interpersonal relationships.

36. LEARNING PRINCIPLE

Adult learners may utilize a variety of cognitive strategies. The most basic of these relate to:

- the type of information and its form of presentation and representation. Type and form can vary from concrete and specific to abstract and general, and coding can be visual, auditory, enactive, or symbolic.

- the temporal and spatial aspects of experience. Temporal aspects provide for sequential learning; allow the learner to follow one facet of experience through time; and allow the learner to identify causal relationships. Spatial aspects provide for simultaneous learning; allow the learner to identify relationships other than causal; and allow the learner to examine a total experience from many viewpoints.

- the investment of energy in learning. The energy invested varies with the strategy employed: from passive, reflecting, or observing to active, experimenting, or testing.

- the differentiating and integrating aspects of thinking. Differentiating allows the learner to separate experience, or the thing to be learned, into separate components for further examination. Integrating allows him to develop connecting links and relationships which result in a unified whole.

Most adult learners have a preferred narrow range within each of these cognitive strategies. The most effective learner can make use of a broad range of strategies, can apply each to an appropriate learning activity, and can utilize varying combinations of strategies.

Facilitating Implications:

Adult learning is facilitated when the learner can be assisted to acquire a broad range of cognitive strategies for use in various contexts. These strategies are mastered as the learner actively uses them in some experience.

Adult learning is facilitated when the teacher can present a range of activities in which he can model different strategies for the learners,

and when the teacher is aware when the learners are or are not utilizing each type of strategy.

Planning Implications:

Program plans should include learning activities which promote the use of all the cognitive strategies; learning resources which focus on all types of information in varying presentation forms; and learning processes which vary from active to passive.

Bibliography

Abbey, D. S. *Now see hear! Applying communications to teaching.* Profiles in Practical Education no. 9. Toronto: Ontario Institute for Studies in Education, 1973.

Adams, J. D. "Phases of personal and professional development." Unpublished manuscript. NTL Institute for Applied Behavioral Science, 1974.

Arends, R., Hersh, R., and Turner, J. "Inservice education and the 6 o'clock news." *Oregon School Study Council*, 1978, *21*(4).

Argyris, C. "The incompleteness of social-psychological theory." *American Psychologist*, 1969, *24*(10), 893-908.

Aspy, D. N. *Toward a technology for humanizing education.* Champaign, Ill.: Research Press Company, 1972.

Atwood, H. M., and Ellis, J. "The concept of need: An analysis for adult education." *Adult Leadership*, 1971, *19*, 210-212.

Bandler, R., and Grinder, J. *The structure of magic.* Volumes I and II. Palo Alto, Ca.: Science and Behavior Books, 1975.

Bates, H. M. "A phenomenological study of adult learners: Participant experiences of a learner-centered approach." Unpublished doctoral dissertation, University of Toronto, 1979.

Bateson, G. *Steps to an ecology of mind.* New York: Ballantine Books, 1972.

Baum, G. "Adult education as a political enterprise." Address to the alumni of the Department of Adult Education, Ontario Institute for Studies in Education, Toronto, 1978.

Blatt, B. *Exodus from pandemonium: Human abuse and a reformation of public policy.* Boston: Allyn & Bacon, 1970.

Bortner, R. W., et al. *Adults as learners.* Proceedings of a conference held at the Institute for the Study of Human Development, Pennsylvania State University, University Park, 1974. Also available as ED 106 462.

Bosco, J. A. "Levels of abstraction and the adult reader." Informal publication of the University of Albany, 1977. Also available as ED 140 003.

Boshier, R. "Behavior modification and contingency management in a graduate adult education program." *Adult Education*, 1975, *26*(1), 16-31.

Botwinick, J. *Cognitive processes in maturity and old age*. New York: Springer Publishing Company, 1967.

Botwinick, J. *Aging and behavior*. New York: Springer Publishing Company, 1973.

Bradford, L. "Creating a learning climate." In K. D. Benne et al. (eds.), *The laboratory method of changing and learning: Theory and application*. Palo Alto, Ca.: Science and Behavior Books, 1975.

Bridges, W. "Thoughts on humanistic education, or is 'teaching' a dirty word?" *Journal of Humanistic Education*, 1973, *13*(1), 5-13.

Brim, O. G., Jr., and Wheeler, S. *Socialization after childhood: Two essays*. New York: John Wiley & Sons, 1966.

Brim, O. G., Jr. "Theories of the male mid-life crisis." In N. K. Schlossberg and A. D. Entine (eds.), *Counselling adults*. Monterey, Ca.: Brooks/Cole Publishing Company, 1977.

Bromley, D. B. *The psychology of human ageing*. 2nd ed. Harmondsworth, Middlesex: Penguin Books, 1974.

Carkhuff, R. R., and Truax, C. B. *Toward counseling and psychotherapy: Training and practice*. Chicago: Aldine, 1967.

Cawley, R., et al. "Cognitive styles and the adult learner." *Adult Education*, 1976, *26*(2), 101-116.

CERLI (Cooperative Educational Research Laboratory, Inc.). *Conceptual base of Program I: Specialist in Continuing Education (SCE)*. Consultant's assessment. Northfield, Ill.: CERLI, 1969. Also available as ED 050 045.

Chickering, A. W. *Education and identity*. San Francisco: Jossey-Bass, 1969.

Chickering, A. W. "Adult development: Implications for higher education." In *New learner: New clientele*. Palatine, Ill.: William Rainey Harper College, 1976. Also available as ED 129 391. (a)

Chickering, A. W. "Developmental change as a major outcome." In M. Keeton and Associates (eds.), *Experiential learning*. San Francisco: Jossey-Bass, 1976. (b)

Coleman, J. S. "Differences between experiential and classroom learning." In M. Keeton and Associates (eds.), *Experiential learning*. San Francisco: Jossey-Bass, 1976.

Combs, A. W. "Humanistic approach to learning in adults." In R. W. Bortner (ed.), *Adults as learners*. Proceedings of a conference held at the Institute for the Study of Human Development, Pennsylvania State University, University Park, 1974.

Cropley, A. J. *Lifelong education: A psychological analysis*. Publication of the Unesco Institute of Education. Toronto: Pergamon Press, 1977.

Cross, K. P. *Accent on learning*. San Francisco: Jossey-Bass, 1976.

Dave, R. H. (ed.). *Foundations of lifelong education*. Oxford: Pergamon Press, 1976.

Davie, L. E., et al. *SHAPES: Shared Process Evaluation System for evaluating community development programs* (Handbook and case studies). Revised. Available from the author, Department of Adult Education, Ontario Institute for Studies in Education, Toronto, 1979.

Denis, M. "Intuitive learning among adults." Unpublished doctoral dissertation, University of Toronto, 1979.

DiVesta, F. J. "Information processing in adult learners." In R. W. Bortner (ed.), *Adults as learners*. Proceedings of a conference held at the Institute for the Study of Human Development, Pennsylvania State University, University Park, 1974.

Draper, J. A., and Barer-Stein, T. "Transition to teaching adults." Final report of a project for the Ontario Institute for Studies in Education, Department of Adult Education, 1979.

Dubin, S. S., and Okun, M. "Implications of learning theories for adult education." *Adult Education*, 1973, *24*(1), 3-19.

Erikson, E. H. *Identity: Youth and crisis*. New York: W. W. Norton, 1968.

Erikson, E. H. (ed.). *Adulthood*. New York: W. W. Norton, 1976.

Even, M. J. *A new instructional design development process for instructors of adults*. University of Nebraska-Lincoln, Department of Adult and Continuing Education, 1977. Also available as ED 146 366.

Even, M. J. "Overview of cognitive styles and hemispheres of the brain research." Paper presented at the Adult Education Research Conference, San Antonio, Texas, 1978.

Farmer, J. A., Jr. "Adult education for transiting." In S. M. Grabowski (ed.), *Paulo Freire: A revolutionary dilemma for the adult educator*. Syracuse, N.Y.: Syracuse University Press, 1972.

Feringer, R. "The relation between learning problems of adults and general learning theory." Address to the Adult Education Research Conference, San Antonio, Texas, 1978. Also available as ED 152 992.

Flaherty, J. M. "Toward the assessment of adult learning." Paper presented to a symposium "Adult Learning Psychology: Implications for Higher Education," Divison of Continuing Education, State University of New York, Buffalo, 1973. Also available as ED 094 173.

Freire, P. *Education for critical consciousness*. New York: Seabury Press, 1973.

Gibb, J. R. "A climate for trust formation." In L. P. Bradford et al. (eds.), *T-group theory and laboratory method*. New York: John Wiley & Sons, 1964.

Ginsburg, H., and Opper, S. "Piaget: Implications for Education." In M. L. Silberman et al. (eds.), *Real learning: A sourcebook for teachers*. Boston: Little, Brown and Company, 1976.

Goleman, D. "Special abilities of the sexes: Do they begin in the brain?" *Psychology Today*, November 1978, 48-59.

Goslin, D. A. (ed.). *Handbook of socialization theory and research*. Chicago: Rand McNally, 1969.

Gould, R. *Transformations: Growth and change in adult life*. New York: Simon and Schuster, 1978.

Grabowski, S. M. (ed.). *Adult learning and instruction*. Syracuse, N.Y.: ERIC Clearinghouse on Adult Education, 1970.

Graves, C. W. "Human nature prepares for a momentous leap." *The Futurist*, April 1974, 72-87.

Gregore, A. F. "Developing plans for professional growth." *NASSP Bulletin*, December 1973, 1-8.

Griffin, V. R. "Self-directed learners and learning." Paper presented at the Wisconsin Adult Education Lyceum, Pewaukee, 1977.

Hall, B. L. "Breaking the monopoly of knowledge: Research methods, participation and development." In B. L. Hall and J. R. Kidd (eds.), *Adult learning: A design for action*. Toronto: Pergamon Press, 1978.

Hart, L. A. *How the brain works: A new understanding of human learning, emotion, and thinking*. New York: Basic Books, 1975.

Hartley, J., and Davies, I. K. "Programmed learning and educational technology." In M. J. A. Howe (ed.), *Adult learning: Psychological research and application*. London: John Wiley & Sons, 1977.

Harvey, O. J., Hunt, D. E., and Schroder, H. M. *Conceptual systems and personality organization*. New York: John Wiley & Sons, 1961.

Havighurst, R. J., and Orr, B. *Adult education and adult needs*. Syracuse: Syracuse University Publications in Continuing Education, 1956.

Hebb, D. O. *Textbook of psychology*. 3rd ed. Toronto: W. B. Saunders Company, 1972.

Houle, C. O. *The design of education*. San Francisco: Jossey-Bass, 1972.

Howe, M. J. A. (ed.). *Adult learning: Psychological research and applications*. London: John Wiley & Sons, 1977.

Hoyer, W. J. "The adult learner: An operant perspective." In R. W. Bortner (ed.), *Adults as learners*. Proceedings of a conference held at the Institute for the Study of Human Development, Pennsylvania State University, University Park, 1974. Also available as ED 106 462.

Huberman, A. M. *Some models of adult learning and adult change: Studies on Permanent Education*. Strasbourg: Council of Europe, Committee for Out-of-school Education and Cultural Development, 1974. Also available as ED 105 177.

Hunt, D. E. *Matching models in education*. Toronto: Ontario Institute for Studies in Education, 1971.

Hunt, D. E. "Learning/Teaching styles." Paper presented to the Conference on Multiculturalism in Education, Ontario Association for Curriculum Development, Toronto, 1977.

Hunt, D. E., and Sullivan, E. V. *Between psychology and education*. Hinsdale, Ill.: Dryden Press, 1974.

Imara, M. "Dying as the last stage of growth." In E. Kübler-Ross (ed.), *Death: The final stage of growth*. Englewood Cliffs, N.J.: Prentice-Hall, 1975.

Ingalls, J. D. *A trainer's guide to andragogy*. Revised ed. Washington: U.S. Department of Health, Education and Welfare, Social and Rehabilitation Service, 1973.

Ireland, D. S., Russell, T., and Armstrong, A. *A report on a training programme for teachers in curriculum development skills*. Ottawa: Ontario Institute for Studies in Education, Ottawa Valley Centre, 1971. Also available as Onteris ON00108.

Jones, R. M. *Fantasy and feeling in education*. New York: Harper Colophon Books, 1968.

Joyce, B., and Weil, M. *Models of teaching*. Englewood Cliffs, N.J.: Prentice-Hall, 1972.

James, M., and Jongeward, D. *Born to win: Transactional analysis with gestalt experiments*. Reading, Mass.: Addison-Wesley, 1971.

James, W. *The varieties of religious experience: A study in human nature*. London: Longmans, Green & Co., 1902.

Kalish, R. A. *Late adulthood: Perspectives on human development*. Monterey, Ca.: Brooks/Cole Publishing Company, 1975.

Katz, D., and Kahn, R. L. "Communication: The flow of information." In J. H. Campbell and H. W. Hepler (eds.), *Dimensions in communication: Readings*. 2nd ed. Belmont, Ca.: Wadsworth, 1970.

Kay, H. "Learning and society." In M. J. A. Howe (ed.), *Adult learning: Psychological research and application*. London: John Wiley & Sons, 1977.

Kelly, G. A. *The psychology of personal constructs.* New York: W. W. Norton, 1955.

Kidd, J. R. *How adults learn.* Revised ed. New York: Association Press, 1973.

Klopf, G. J., Bowman, G. W., and Joy, A. *A learning team: Teacher and auxiliary.* Washington: Office of Education (DHEW), 1969. Also available as ED 031 438.

Knowles, M. S. *The modern practice of adult education.* New York: Association Press, 1970.

Knowles, M. S. *The adult learner: A neglected species.* Houston, Texas: Gulf Publishing Company, 1973.

Knox, A. B. *Adult development and learning.* San Francisco: Jossey-Bass, 1977.

Koestler, A. *The act of creation.* New York: Macmillan, 1964.

Kolb, D. A., and Fry, R. "Towards an applied theory of experiential learning." In C. L. Cooper (ed.), *Theories of group processes.* London: John Wiley and Sons, 1975.

Kreitlow, B. W. *Basic explorations in adult re-education.* Final report from the Adult Re-education Project, Research and Development Center for Cognitive Learning, University of Wisconsin, Madison, 1970. Also available as ED 042 991.

Kübler-Ross, E. *On death and dying.* New York: Macmillan, 1970.

Kursh, C. O. "The benefits of poor communications." *Psychoanalytic Review,* 1971, *58,* 198-208.

Landvogt, P. L. "A framework for exploring the adult educator's commitment toward the construct of 'guided learning'." Paper presented to the Adult Education Research Conference, Minneapolis, Minn., 1970. Also available as ED 036 765.

Lam, Y. L. J. "Transitional analysis of adult learners' needs." *Alberta Journal of Educational Research,* 1976, *22*(1), 59-70.

Larson, C. G. "The adult learner: A review of recent research." *American Vocational Journal,* 1970, *45*(6), 67-68.

Lazarus, R. S. *Psychological stress and the coping process.* New York: McGraw-Hill, 1966.

Leagans, J. P., Copeland, H. G., and Kaiser, G. E. *Selected concepts from educational psychology and adult education for extension and continuing educators.* Syracuse: Syracuse University Press, Publications in Continuing Education, 1971.

Levi, L. (ed.). *Stress and distress in response to psychological stimuli.* Oxford: Pergamon Press, 1972.

Levinson, D. J. *The seasons of a man's life.* New York: Alfred A. Knopf, 1978.

Lewin, K. *Field theory in social science.* New York: Harper & Row, 1951.

Lindquist, J. (ed.). *Designing teaching improvement programs.* Berkeley, Ca.: Pacific Soundings Press, 1978.

Mager, R. F. *Preparing instructional objectives.* Belmont, Ca.: Fearon Publishers, 1962.

Maslow, A. *The farther reaches of human nature.* New York: Viking, 1970.

Massey, S. R. *Staff development: Teaching adult professionals.* Durham, N. H.: New England Teacher Corps Network, 1978. Also available as ED 148 773.

Maudsley, D. B. "A theory of meta-learning and principles of facilitation: An organismic perspective." Unpublished doctoral dissertation, University of Toronto, 1979.

McClusky, H. Y. "An approach of a differential psychology of the adult potential." In S. M. Grabowski (ed.), *Adult learning and instruction.* Syracuse, N.Y.: ERIC Clearinghouse on Adult Education, 1970.

McKenney, J. L., and Keen, P. G. W. "How managers' minds work." *Harvard Business Review,* 1974, *52*(3), 79-90.

McKenzie, L. "The issue of andragogy." *Adult Education,* 1977, *27*(4), 225-229.

McLaren, J. A. "Preference for structure in adult learning situations as a function of conceptual level." Unpublished master's thesis, University of Toronto, 1975.

Merleau-Ponty, M. *Phenomenology of perception.* Translated from the French by Colin Smith. London: Routledge and Kegan Paul, 1962.

Messick, S., and Associates. *Individuality in learning.* San Francisco: Jossey-Bass, 1976.

Mezirow, J. *Education for perspective transformation: Women's re-entry programs in community settings.* New York: Columbia University, Teachers College, Center for Adult Education, 1978.

Miller, H. *Teaching and learning in adult education.* New York: Macmillan, 1964.

More, W. S. *Emotions and adult learning.* Lexington, Mass.: Lexington Books, 1974.

Morstain, B. R., and Smart, J. C. "A motivational typology of adult learners." *Journal of Higher Education,* 1977, *48*(6), 665-679.

Murphy, G. "Social motivation." In G. Lindzey (ed.), *Handbook of social psychology. Vol.II: Special fields and application.* Cambridge, Mass.: Addison-Wesley, 1954.

Neugarten, B. L. "Adaptation and the life cycle." In N. K. Schlossberg and A. D. Entine (eds.), *Counselling adults*. Monterey, Ca.: Brooks/Cole Publishing Company, 1977.

Neugarten, B. L. (ed.) *Middle age and aging: A reader in social psychology*. Chicago: University of Chicago Press, 1968.

Norman, D. A. *Cognitive organization and learning*. La Jolla, Ca.: Center for Human Information Processing, 1973. Also available as ED 083 543.

Ornstein, R. E. *The psychology of consciousness*. San Francisco.: W. H. Freeman, 1972.

Palmore, E. (ed.). *Normal aging: Reports from the Duke Longitudinal Study, 1955-1969*. Durham, N.C.: Duke University Press, 1970.

Pine, G. J., and Boy, A. V. *Learner centered teaching: A humanistic view*. Denver, Co.: Love Publishing Company, 1977.

Pipe, P. *Objectives: Tool for change*. Belmont, Ca.: Fearon Publishers, 1975.

Pratt, D. D. "Instructor behavior and psychological climate in adult learning." Paper presented to the Adult Education Research Conference, Ann Arbor, Mich., 1979.

Riley, M. W., Foner, A., et al. *Aging and society. Vol. I: An inventory of research findings*. New York: Russell Sage Foundation, 1968.

Rogers, C. R. *Client centered therapy*. Boston: Houghton Mifflin, 1951.

Rogers, C. R. *Freedom to learn*. Columbus, Ohio: Charles E. Merrill, 1969.

Rotter, J. B., Chance, J. E., and Phares, E. J. *Applications of a social learning theory to personality*. New York: Holt, Rinehart and Winston, 1972.

Rowe, C. J. *An outline of psychiatry*. 6th ed. Dubuque, Iowa: Wm. C. Brown Company, 1975.

Rubin, L. J. *A study on the continuing education of teachers*. Santa Barbara, Ca.: Center for Coordinated Education, University of California, 1969. Also available as ED 036 487.

Russell, T. L. "What does practice teaching teach?" *Education Canada*, Spring, 1979, 6-11.

Satir, V. *Peoplemaking*. Palo Alto, Ca.: Science and Behavior Books, 1972.

Schon, D. A. *Beyond the stable state*. New York: W. W. Norton, 1971.

Schutz, W. C. *Joy: Expanding human awareness*. New York: Grove Press, 1967.

Selye, H. *The stress of life*. New York: McGraw-Hill, 1956.

Sinnett, W. E. "Contemporary human images and learning paradigms." Doctoral dissertation in progress, University of Toronto.

Smith, A. *Powers of mind.* New York: Ballantine Books, 1975.

Smith, R. M. *Learning how to learn in adult education.* Information Series no. 10. De Kalb, Ill.: ERIC Clearinghouse in Career Education, 1976. Also available as ED 132 245.

Smith, R. M., and Haverkamp, K. K. "Toward a theory of learning how to learn." *Adult Education,* 1977, *28*(1), 3-21.

Steele, S. *Contemporary approaches to program evaluation: Implications for disadvantaged adults.* Washington: Education Resources Division, Capitol Publications, 1973.

Tart, C. T. *States of consciousness.* New York: E. P. Dutton & Co., 1975.

Taylor, M. M. "Adult learning in an emergent learning group: Toward a theory of learning from the learner's perspective." Unpublished doctoral dissertation, University of Toronto, 1979.

Thibodeau, J. "Adult performance on Piagetian tasks: Implications for education." Paper presented at the Adult Education Research Conference, Ann Arbor, Mich., 1979.

Thistle, M. "Emotional barriers to communication." *Industrial Canada,* May 1968.

Thomae, H. (ed.). *Contributions to human development. Vol. 3: Patterns of aging.* Basel, Switzerland: S. Karger, 1976.

Thomas, A. M. "Studentship and membership." *Journal of Education* (University of Alberta), Summer 1976.

Thomas, L. F., and Harri-Augstein, E. S. "Learning to learn: The personal construction and exchange of meaning." In M. J. A. Howe (ed.), *Adult Learning: Psychological research and applications.* London: John Wiley and Sons, 1977.

Thompson, J. F. "Formal properties of instructional theory for adults." In S. M. Grabowski (ed.), *Adult learning and instruction.* Syracuse, N.Y.: ERIC Clearinghouse on Adult Education, 1970.

Thompson, W. I. *At the edge of history.* New York: Harper Colophon Books, 1971.

Toffler, A. *Future shock.* New York: Random House, 1970.

Tough, A. M. *The adult's learning projects.* Toronto: Ontario Institute for Studies in Education, 1971.

Tough, A. M. "Major learning efforts: Recent research and future directions." *Adult Education,* 1978, *28*(4), 250-263.

Tuckman, B. W. "Developmental sequence in small groups." *Psychological Bulletin*, 1965, *63*, 384-399.

Tyler, R. W. *Basic principles of curriculum and instruction*. Chicago: University of Chicago Press, 1957.

Vaillant, G. E. *Adaptation to life*. Boston: Little, Brown and Company, 1977.

Vanier, J. *Tears of silence*. Toronto: Griffin House, 1970.

Verner, C., and Davison, C. V. *Physiological factors in adult learning and instruction*. Tallahassee: Florida State University, Department of Adult Education, Research Information Processing Center, 1971.

Warren, R. M., and Warren, R. P. "A comparison of speech perception in childhood, maturity and old age by means of the verbal transformation effect." *Journal of Verbal Learning and Verbal Behavior*, 1966, *5*, 124-146.

Watzlawick, P., Weakland, J., and Fisch, R. *Change*. New York: W. W. Norton, 1974.

Weiss, C. H. *Evaluation research: Methods for assessing program effectiveness*. Englewood Cliffs, N. J.: Prentice-Hall, 1972.

Wolfensberger, W., and Nirje, B. *The principle of normalization in human services*. Toronto: National Institute on Mental Retardation, 1972.

Yanoff, J. M. "The functions of the mind in the learning process." In M. L. Silberman et al. (eds.), *Real learning: A sourcebook for teachers*. Boston: Little, Brown and Company, 1976.